Service Manual

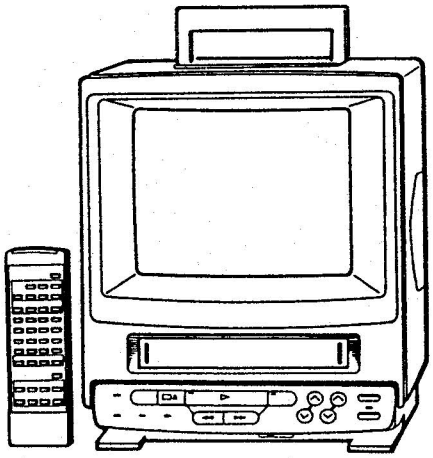
COLOR TELEVISION/VIDEO CASSETTE RECORDER

VHS PAL

KabelTV

ORION

Combi 2690 PAL



Änderungen vorbehalten!

Printed in Germany

Chassis Code:

C

Bestell-Nr.:

4262

SPECIFICATIONS

TV SECTION

PICTURE SIZE	10 inch
SYSTEM	PAL
FREQUENCY RANGE: VHF(L)	E2-E4, X-Z ch
VHF(H)	S1-S10, E5-E12, S11-S20 ch
UHF	21-69 ch
MAXIMUM SENSITIVITY: VHF	20 dB
UHF	20 dB
INTERMEDIATE FREQUENCY:	
Picture IF carrier Frequency	38.9 MHz
Color Sub Carrier Frequency	34.47 MHz
Sound IF Carrier Frequency	33.4 MHz
SOUND INTERMEDIATE FREQUENCY	5.5 MHz
MAXIMUM OUTPUT POWER	0.75 W
10% THD OUTPUT POWER	0.6 W
SPEAKER	16 ohm
POWER SOURCE	AC 220V

VCR SECTION

OPERATING TEMPERATURE	5°C to 40°C
SYSTEM	CCIR 625 lines, 50 fields PAL B/G
VIDEO RECORDING SYSTEM	VHS, 2 rotary heads helical scanning system Luminance: FM azimuth Color signal: Converted sub-carrier phase shift
AUDIO TRACK	1 track
TAPE FORMAT	12.7 mm
TAPE SPEED	SP: 23.39 mm/s
INPUT LEVEL	Video: VIDEO IN 1.0 Vp-p, 75 ohm unbalanced Audio: AUDIO IN -8 dB, 50k ohm unbalanced
WEIGHT	13 kg
DIMENSIONS	310(W)x381(D)x330.5(H)mm

IMPORTANT

*USE AN ISOLATION TRANSFORMER WHEN PERFORMING ANY SERVICE ON THIS CHASSIS.

*WHEN REMOVING A PCB OR RELATED COMPONENT, AFTER UNFASTENING OR CHANGING WIRE, BE SURE TO PUT WIRE BACK IN ITS ORIGINAL POSITION.

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HQ FEATURE

This video cassette recorder marked "HQ" incorporates VHS high quality picture technology. A built-in detail enhancer is used to boost the recorded signal and provide maximum picture quality in playback. It is compatible with other VHS video cassette recorders.

DISASSEMBLY INSTRUCTIONS

REMOVAL OF BACK CABINET (See Fig. 1)

a. Remove the 6 screws ① which are used for holding the BACK CABINET.
b. Remove screws ② and ③.
c. Remove the BACK CABINET in the direction arrow.

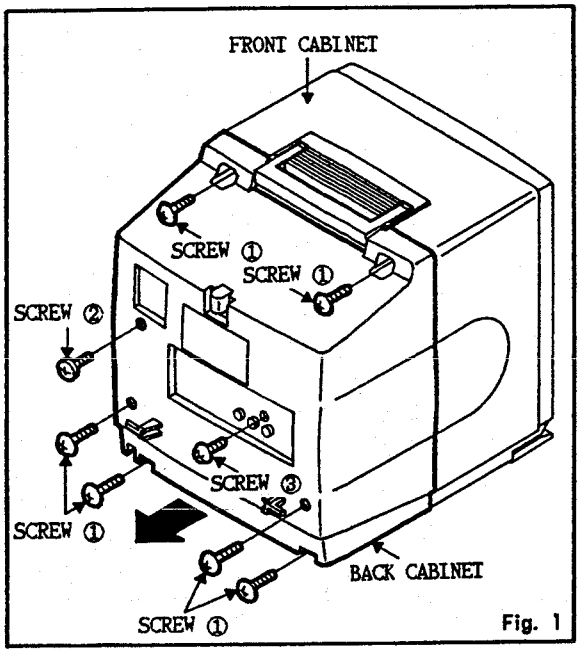


Fig. 1

REMOVAL OF TV/VCP BLOCK (See Fig. 2)

NOTE: Unplug the AC cord when you remove PCB for servicing.

a. Remove the CRT PCB in the direction of arrow, then unplug the following connector. (CP204 1 pin).
b. Remove the ANODE CAP.

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE.

c. Disconnect the following connectors. (CP008 4 pin, CP351 2 pin, CP402 2 pin, CP0006 8 pin, CP701B 2 pin, CP7004 3 pin, CP8003 12 pin, CP8007 7 pin)
d. Remove 2 screws ①, then slide out the TV BLOCK as shown in the direction of arrow ©.
e. Lift up the VIDEO BLOCK as shown in the direction of arrow Ⓑ. Make sure the supports ③ of both side holders ② are unlocked, and then slide out the VIDEO BLOCK as shown in the direction of arrow ©.

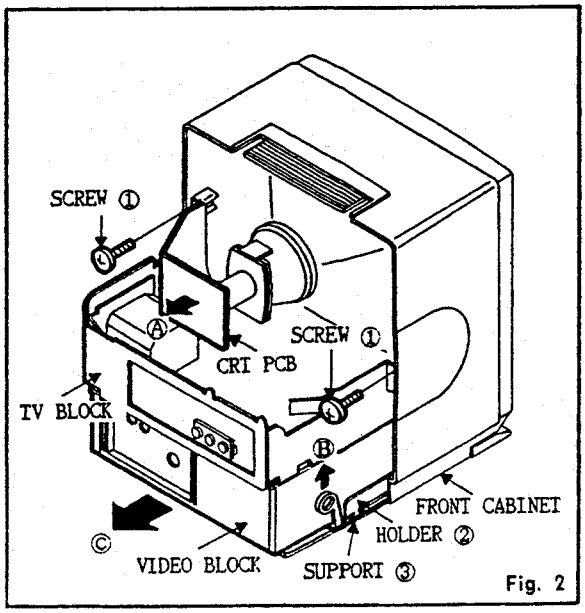


Fig. 2

3. REMOVAL OF TV MAIN PCB (See Fig. 3)

a. Remove the 4 screws ①.
b. Remove the screw ②.
c. Remove the 7 screws ③.
d. Remove the TV MAIN PCB in the direction of arrow.
(When you remove PCB, avoid Ⓐ point.)

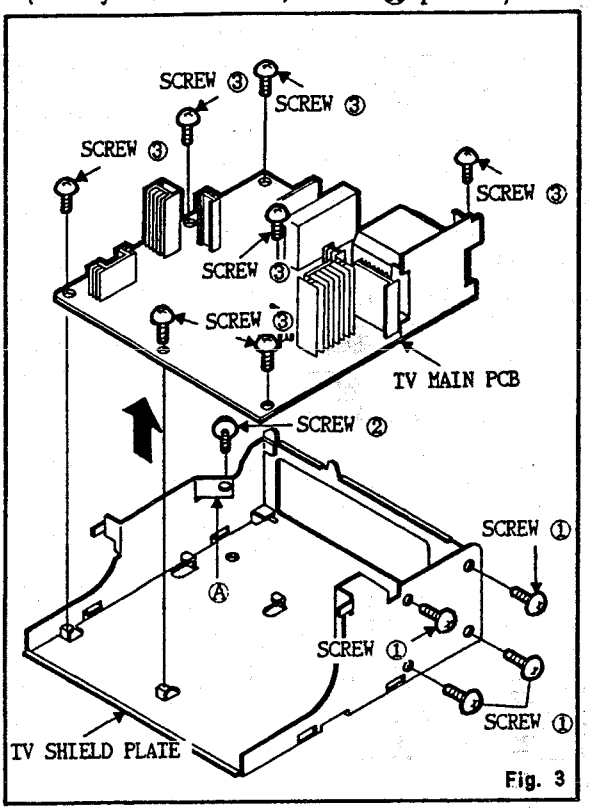


Fig. 3

4. REMOVAL OF TOP CABINET AND OPERATION PCB (See Fig. 4)

a. Remove the 4 screws ①.
b. Remove the VCP holder(L), (R) and the TOP CABINET in the direction of arrow Ⓐ.
c. Remove the OPERATION 2 PCB in the direction of arrow Ⓑ.
e. Unlock the 2 supports ②, then remove the OPERATION 1 PCB in the direction of arrow ©.

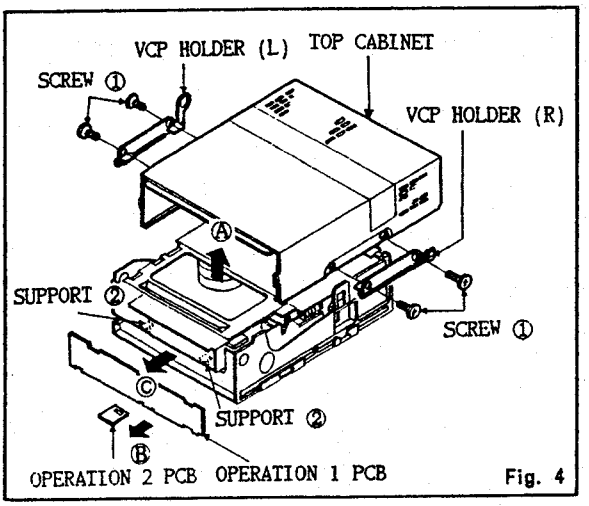


Fig. 4

5. REMOVAL OF BOTTOM CABINET (See Fig. 5)

a. Remove the screw ①.
b. Unlock the 3 supports ②.
c. Open 2 Ⓐ points and unlock them. Remove the BOTTOM CABINET.

DISASSEMBLY INSTRUCTIONS

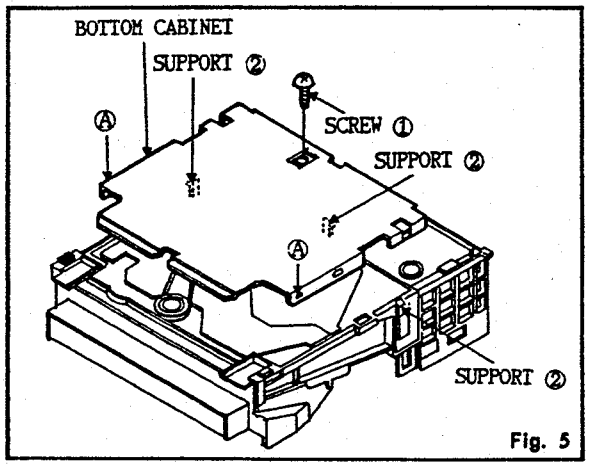


Fig. 5

6. LOCATION OF PRINTED CIRCUIT BOARDS. (See Fig. 6)

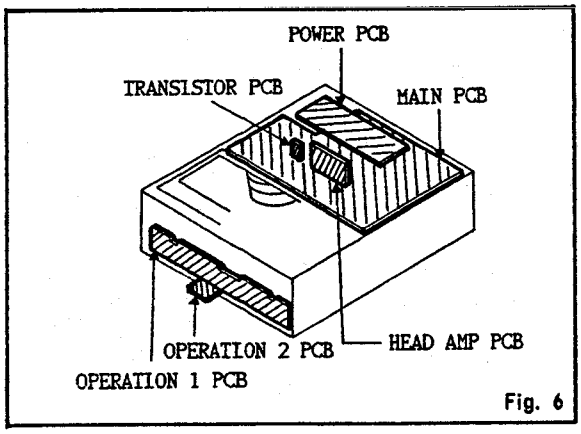


Fig. 6

7. REMOVAL OF MAIN PCB (See Fig. 7)

a. Remove the 3 screws ①.
b. Remove the 2 screws ②.
c. Unlock the 2 supports ③ and remove the MAIN PCB in the direction of the arrow Ⓐ, then disconnect the following connectors. (CP1001 2 pin, CP2001 2 pin, CP2002 6 pin, CP2003 9 pin, CP2004 15 pin, CP2501 6 pin, CP2502 8 pin, CP4102 8 pin, CP5001 5 pin, and remove the soldering of CD8001 5 pin, CD8002 5 pin, CD8005 3 pin)
d. Unlock the 2 supports ④.
e. Remove the JACK PLATE in the direction of arrow Ⓑ.

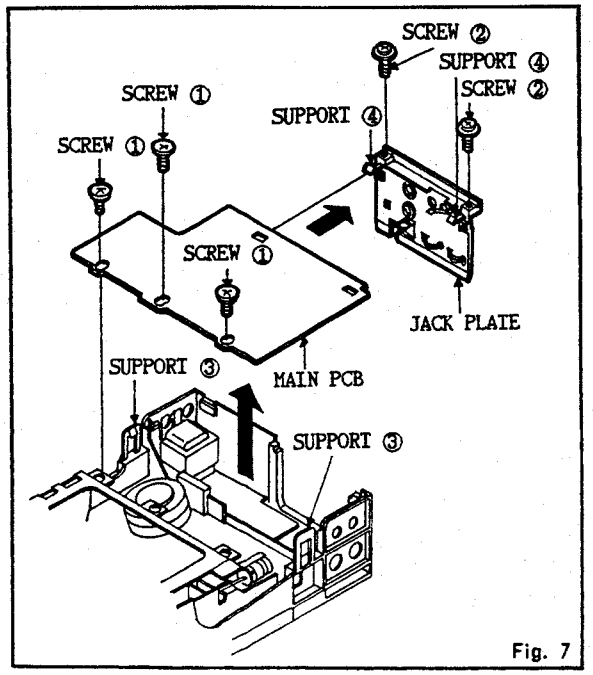


Fig. 7

8. REMOVAL OF POWER PCB (See Fig. 8)

a. Remove the screw ①.
b. Remove the 2 screws ②.
c. Remove the TRANSISTOR PCB. (Refer to item 2-9 of the MECHANICAL ADJUSTMENT.)
d. Remove the POWER PCB in the direction of arrow.

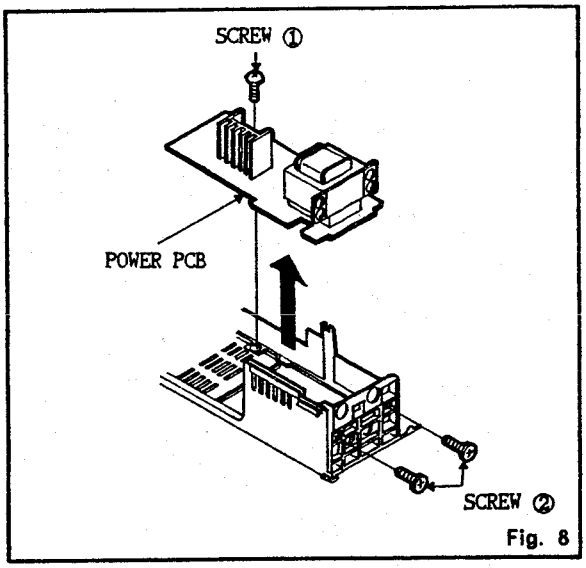


Fig. 8

9. REMOVAL OF FRONT LOADING UNIT AND CHASSIS SECTION (See Fig. 9)

a. Remove the 2 screws ①.
b. Remove the FRONT LOADING BELT.
c. Remove the FRONT LOADING UNIT in the direction of arrow Ⓐ.
d. Remove the 3 screws ②.
e. Remove the 2 supports ③ and remove the CHASSIS SECTION in the direction of arrow Ⓑ.

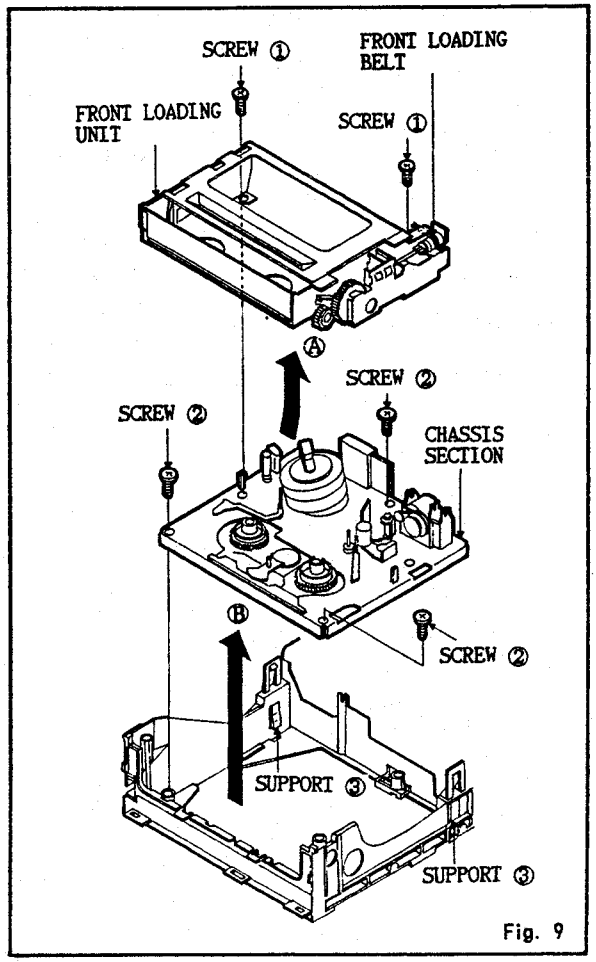


Fig. 9

VCR SECTION

KEY TO ABBREVIATIONS

A	AC	:Alternating Current
	A/C	:Audio/Control
	ACC	:Automatic Color Control
	AE	:Audio Erase
	AFC	:Automatic Frequency Control
	AFT	:Automatic Fine Tuning
	AFT DEF	:Automatic Fine Tuning Defeat
	AGC	:Automatic Gain Control
	AMP	:Amplifier
	ANT	:Antenna
	APC	:Automatic Phase Control
	ASB	:Assemble Mode
	AT	:All Time
B	BGP	:Burst Gate Pulse
	BOT	:Beginning of Tape
	B.P.F	:Band Pass Filter
	B/W	:Black & White
C	CASE	:Cassette
	CAP	:Capstan
	CARR	:Carrier
	CCD	:Charged Coupled Device
	CH	:Channel
	CLK	:Clock
	CLOCK(SY-SE)	:Clock(Syscon to Servo)
	CONV	:Converter
	CPM	:Capstan Motor
	CTL	:Control
	CYL	:Cylinder
	CYL-M	:Cylinder Motor
	CYL SENS	:Cylinder Sensor
D	DATA(SY-SE)	:Data(Syscon to Servo)
	DC	:Direct Current
	DD UNIT	:Direct Drive Motor Unit
	DET	:Detection, Detector
	DEV	:Deviation
E	EE	:Electric to Electric
	EF	:Emitter Follower
	EOT	:Ending of Tape
	EQ	:Equalizer
	EXT	:External
F	FBC	:Feed Back Clamp
	FE	:Full Erase
	FG	:Frequency Generator
	FL SW	:Front Loading Switch
	FM	:Frequency Modulation
	FSC	:Frequency Sub Carrier
	FWD	:Forward
G	GND	:Ground
H	H.P.F	:High Pass Filter
I	IF	:Intermediate Frequency
	INST	:Insert Mode
	INT	:Interrupt
	INV	:Inverter
L	LED	:Light Emitting Diode
	LIMIT AMP	:Limiter Amplifier
	LM	:Loading Motor
	LOAD	:Loading
	L.P.F	:Low Pass Filter
	LUMI	:Luminance
M	MM	:Monostable Multivibrator
	MOD	:Modulator, Modulation
	MS SW	:Mech State Switch
N	NC	:Non Connection
O	OSC	:Oscillator
	OR EQ	:Or Equivalent
P	PB	:Playback
	PB CTL	:Playback Control
	P.CON	:Power Control
	PD	:Phase Detector
	PG	:Phase Generator
	PWM	:Pulse Width Modulation
	PWM TV	:Pulse Width Modulated Tuning Voltage
R	REC	:Recording
	REC ST	:Recording Start
	REEL BRK	:Reel Brake
	REEL S	:Reel Sensor
	REG	:Regulator, Regulated
	REW	:Rewind
	RF	:Radio Frequency
S	S.CLK	:Serial Clock
	S.COM	:Sensor Common
	S.DATE IN	:Serial Date Input
	S.DATE OUT	:Serial Date Output
	SEG	:Segment
	SER	:Search Mode
	SI	:Serial Input
	SIF	:Sound Intermediate Frequency
	SO	:Serial Output
	SP	:Standard Play
	STB	:Serial Strobe
	SW	:Switch
	SYNC SEP	:Sync Separator, Separation
T	TR	:Transistor
	TRACK VR	:Tracking Variable Resistor
	TRIC PB	:Trick Playback
	TP	:Test Point
U	UNREG	:Unregulated
V	VCO	:Voltage Controlled Oscillator
	VIF	:Video Intermediate Frequency
	VP	:Vertical Pulse, Voltage Display
	VR	:Variable Resistor
	V-SYNC	:Vertical-Synchronization
	VT	:Voltage Tuning
Y	Y/C	:Luminance/Chrominance

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or disuse may cause transformation and aging of rubber parts.

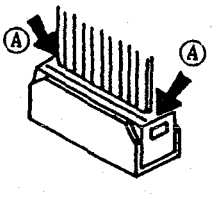
Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Full Erase Head	□	□	□	□	□	Clean those parts in contact with the tape.
Audio Control Head	□	□	□	□	□	
Loading Belt		□		○		Clean the rubber, and parts which the rubber touches.
Reel Belt		□		○		
Front Loading Belt		□		○		
Pinch Roller	□	□	□	□	□○	
Capstan DD Unit					○	
Loading Motor					○	
Tension Band					○	
Capstan Shaft	□	□	□	□	□	
Impedance Roller	□	□	□	□	□	Replace when rolling becomes abnormal.
Tape Running Guide Post	□	□	□	□	□	
Cylinder Unit	□	□○	□	□○	□○	※

○ : Replace
□ : Clean

※ Clean the upper drum (especially the video heads) in the direction or drum rotation using a thick, textured cloth with a high quality methyl alcohol. Avoid wiping vertically as this may cause damage to the video heads.

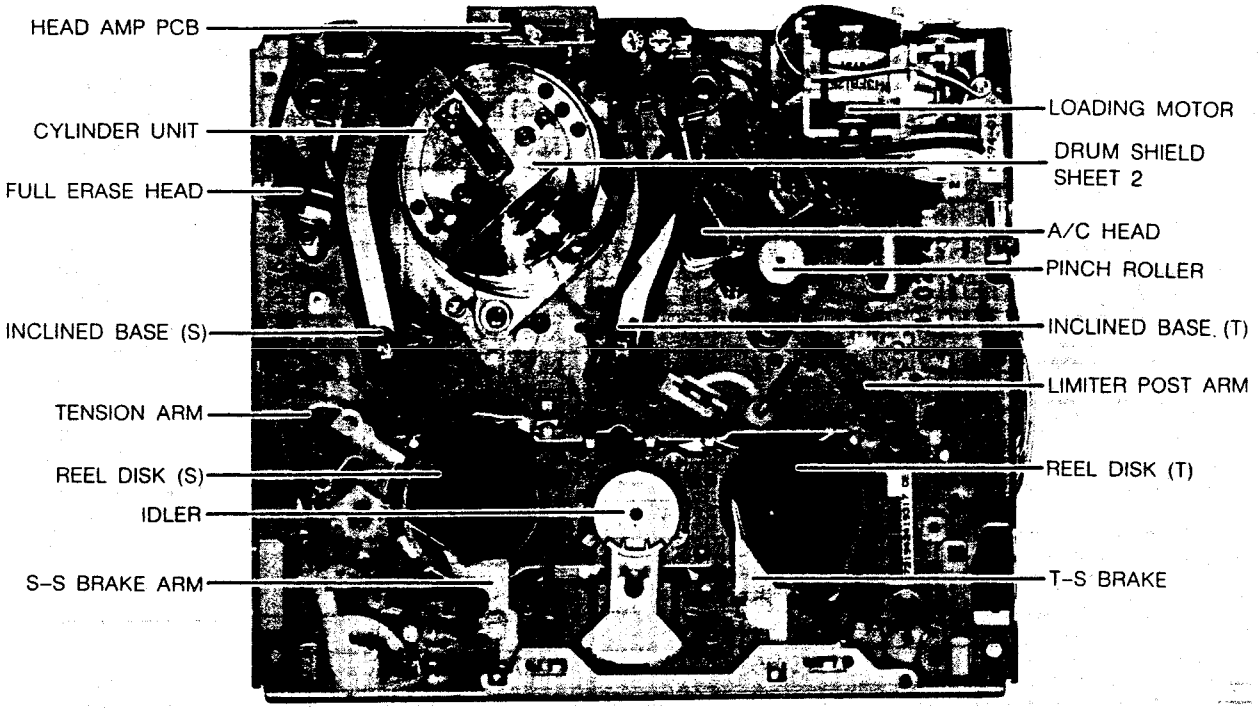
HOW TO REMOVE AND INSTALL RIBBON WIRE IN CASE OF DISCONNECTION.

1. To remove the wire, simultaneously press both parts indicated by arrow Ⓐ .
2. To install the wire, do not press the parts indicated by arrow Ⓐ , but insert the wire into the connector.

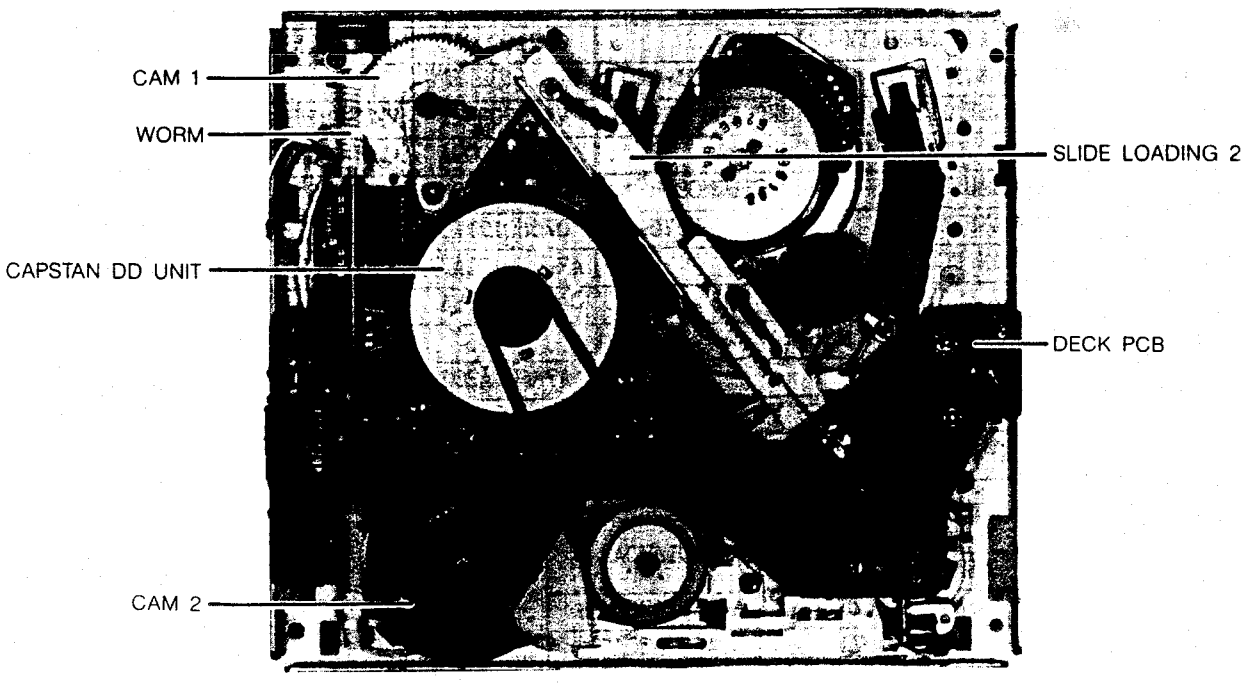


DECK PARTS LOCATION

(TOP VIEW)



(BOTTOM VIEW)



MECHANICAL ADJUSTMENTS

1. BEFORE MAKING MECHANICAL ADJUSTMENTS

CAUTION

Inferior silicon grease can damage IC's and transistors.
When replacing IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

PRECAUTION

Remove the following items before adjusting the deck and starting work.

1. Remove 8 screws and the BACK CABINET.
2. Disconnect the following connectors. (CP7108 2 pin, CP0006 8 pin, CP7004 3 pin, CP8003 13 pin, CP8007 7 pin)
3. Liftup the video block, make sure two locks of the holder (L), (R) are unlocked. Slide out the video block to your side.
4. Remove 4 screws, then take out the holder (L) and (R) to remove the TOP CABINET.
5. Remove 1 screw and remove the BOTTOM CABINET. **(Refer to DISASSEMBLY INSTRUCTIONS)**
6. When you want to operate the VCR only, connect the connector CD7001 to AC power source.
7. Remove the STAGE. **(Refer to Item 1-1)**

Read the following NOTED items before starting work.

* Remove the stage when replacing the deck parts.
* Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the stage. (Do not place an object which weighs over 500g.)
* When you activate the deck without the stage, cover Q1101(BOT SENSOR) and Q1102(EOT SENSOR) with black tubes. Be sure to return the deck to it's original condition after repairs are completed.

1-1: HOW TO REMOVE AND INSTALL STAGE

REMOVAL **(Refer to Fig. 1)**

1. Remove 3 screws ① from the main PCB.
2. Remove the 2 screw ④ located on the top of the JACK PLATE and the screw ⑤ located on the bottom of it inside the unit. Disconnect the main PCB by releasing the 2 hooks (1 on each side of the unit).
3. Remove the pulley of loading motor box and the front loading belt hooked on the stage worm.
4. Remove the screws ② and ③ in the EJECT mode.
5. Push the stage in the direction of the arrow and lift up to remove the stage.

NOTE

When you remove and install the stage, be careful not to touch the guide pin or cylinder head.

INSTALLATION

Install new stage in the reverse steps of REMOVAL.

NOTE

When you re-install the stage, it should be in the EJECT mode.

CONFIRMATION

1. The front loading operation works well w turning on the power and when inserting cassette tape into the stage.
2. Each function works well when pressing t PLAY, EJECT and REC buttons.

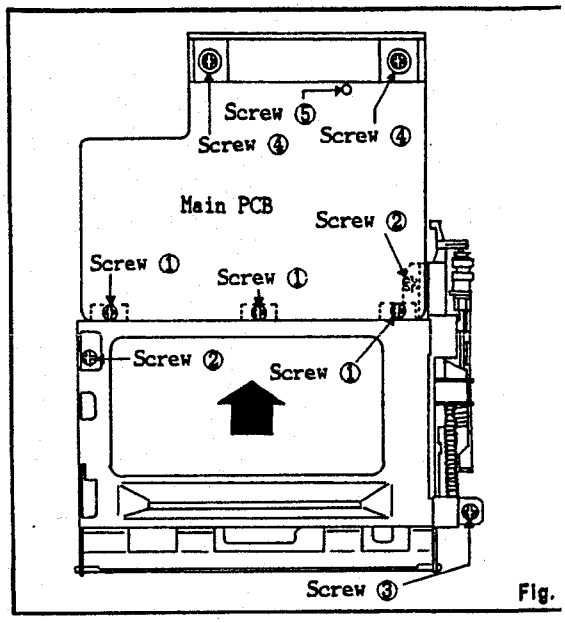


Fig.

2. REPLACEMENT OF MAIN PARTS

2-1: REEL DISK

REMOVAL **(Refer to Fig. 2-1)**

(Supply Reel Disk)

1. Remove the actuator sub brake.
2. Remove the SS brake spring, then remove SS brake arm.
3. Remove the tension band from the main chassis.
4. Remove the polyslider washer ①.
5. Pull the supply reel disk ③ upward and replace it.

(Take-Up Reel Disk)

1. Remove the actuator sub brake.
2. Remove the TS brake spring, then remove TS brake.
3. Remove the polyslider washer ④.
4. Pull the take-up reel disk ⑤ upward an replace it.

NOTE

The height adjustment washers ② and ⑥ sometimes attached to the back of the r disk.

INSTALLATION

(Supply/Take-Up Reel Disk)

1. Clean the reel disk shaft and put in he adjusting washers ② and ⑥.
2. Install new reel disk.
3. Adjust the height of the reel disk. **(Refer to Item 3-5)**
4. Pull out the new supply/take-up reel di After oiling (Cosmo Oil Hydro HV100) th reel disk shaft, install the new supply take-up reel disk again.
5. Install the supply/take-up reel disk in the reverse steps of REMOVAL.

MECHANICAL ADJUSTMENTS

IE

. Be careful not to damage the tension band at the time of removal and installation.
. Be careful not to scratch the reel disk shaft with the polyslider washer or the tool at the time of removal and installation.
. After installation, adjust and confirm the tension post position. **(Refer to Item 3-6)**

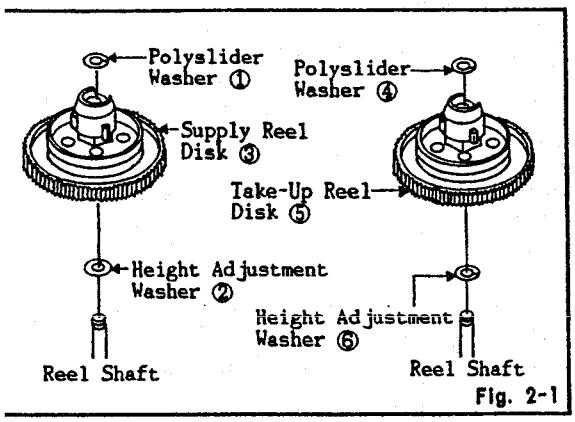


Fig. 2-1

-2: A/C HEAD

EMOVAL **(Refer to Fig. 2-2)**

Remove the screws ①, ② and ③.

NSTALLATION

Install new A/C head in reverse steps of REMOVAL.

OTE

Do not touch the heads by any means when replacing the A/C head.

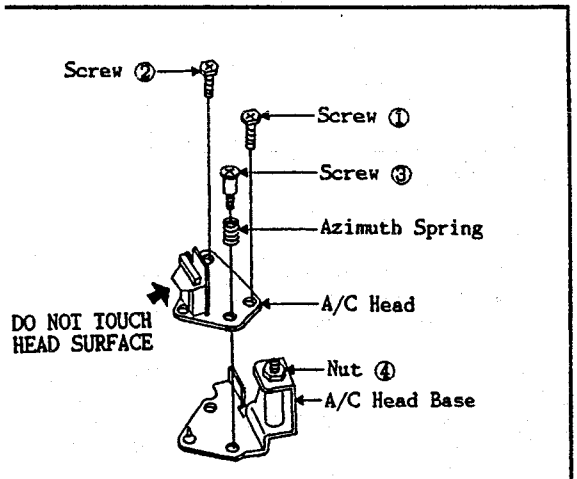


Fig. 2-2

2-3: UPPER DRUM

REMOVAL **(Refer to Fig. 2-3)**

1. Remove the 2 screws ⑤ and drum shield sheet 2, then remove the screw ② which holds the earth brush.
2. Desolder the lead wires ① from the upper drum assembly.
3. Be sure to use gloves, avoid the surface of cylinder unit. Hold down the upper drum to prevent it from turning, then remove the screws ④, and remove the upper drum with the upper drum fixing jig **(JG038)**.

INSTALLATION

Install new upper drum in the reverse steps of REMOVAL.

NOTE

1. Do not apply excessive pressure to screwdriver.
2. Before installing, confirm that there are no scratches or dust on the disk, upper drum surface and drum head surface.
3. When setting, take care not to let any dust or dirt go into the clearance between disk and upper drum.
4. Do not touch the surface of the cylinder head.
5. Check the adjustment of tape running. **(Refer to Item 4-6)**
6. After replacement confirm the following adjustments.

   a. ELECTRICAL ADJUSTMENTS : ITEM 2-1
   b. ELECTRICAL ADJUSTMENTS : ITEM 2-2
   c. MECHANICAL ADJUSTMENTS : ITEM 2-3
   d. MECHANICAL ADJUSTMENTS : ITEM 4-3

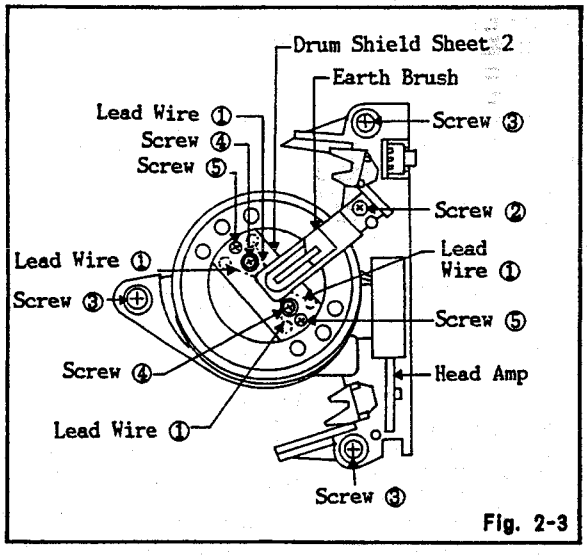


Fig. 2-3

MECHANICAL ADJUSTMENTS

2-4: CYLINDER UNIT

REMOVAL (Refer to Fig. 2-3)

1. Remove the transistor PCB. (Refer to Item 2-9)
2. Disconnect the connector (CP4102, 8 pin) from the head amp PCB.
3. Remove the screws ③, then remove the cylinder unit from the main chassis.
4. Disconnect the connector of the cylinder motor.

INSTALLATION

Install new cylinder unit in reverse steps of REMOVAL.

NOTE

1. Do not touch the surface of the cylinder head.
2. After replacement confirm the following adjustments.

a. ELECTRICAL ADJUSTMENTS : ITEM 2-1
b. ELECTRICAL ADJUSTMENTS : ITEM 2-2
c. ELECTRICAL ADJUSTMENTS : ITEM 2-3
d. MECHANICAL ADJUSTMENTS : ITEM 4-3

2-5: TENSION BAND

REMOVAL (Refer to Fig. 2-4)

1. Remove the actuator sub brake.
2. Remove the SS brake spring, then remove the SS brake arm.
3. Remove the screw ①.
4. Remove the tension band from the tension arm.

INSTALLATION

Install new tension band in reverse steps of REMOVAL.

NOTE

1. Install the tension band without twisting it.
2. Adjust the placement of the tension post. (Refer to Item 3-6)
3. Adjust and confirm the back tension during playback. (Refer to Item 3-7)

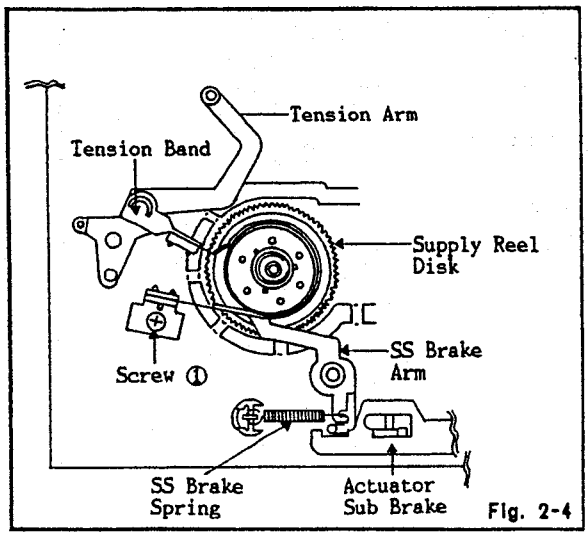


Fig. 2-4

2-6: LOADING MOTOR / LOADING MOTOR BELT

REMOVAL (Refer to Fig. 2-5)

1. Remove the 2 wires soldered to the loading motor.
2. Remove the lead wire in the hook of the loading motor box.
3. Remove the loading motor belt ②.
4. Remove the screw ①, then remove the loading motor box.
5. Remove the front loading belt ③.
6. Remove the screw ④, then lift the loading motor upward.

INSTALLATION

Install new loading belt in reverse steps of REMOVAL.

NOTE

1. Clean the pulley when replacing loading belt.
2. Replace it while in the EJECT mode.
3. Avoid getting grease on the loading belt.

CHECK AFTER INSTALLATION

1. Check if strange sound is heard in PLAY mode.
2. Check if P2 post and P3 post are fitted to the post stopper.
3. Check if P2 post and P3 post are completely returned in EJECT mode.

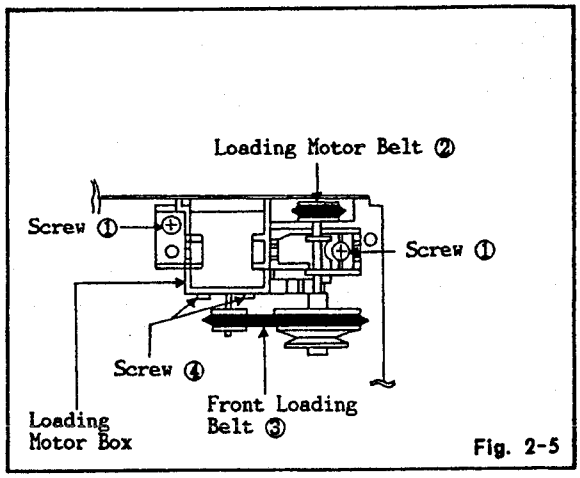


Fig. 2-5

2-7: PINCH ROLLER

REMOVAL (Refer to Fig. 2-6)

1. Remove the pinch roller arm spring.
2. Remove the polyslider washer ①.
3. Remove the pinch roller.

INSTALLATION

Install new pinch roller in reverse steps of REMOVAL.

NOTE

1. Be careful not to bend the pinch roller arm in removal and installation.
2. Do not touch the pinch roller. (Use gloves.)

CHECK AFTER INSTALLATION

Check if the tape is running normally in PLAY mode.

MECHANICAL ADJUSTMENTS

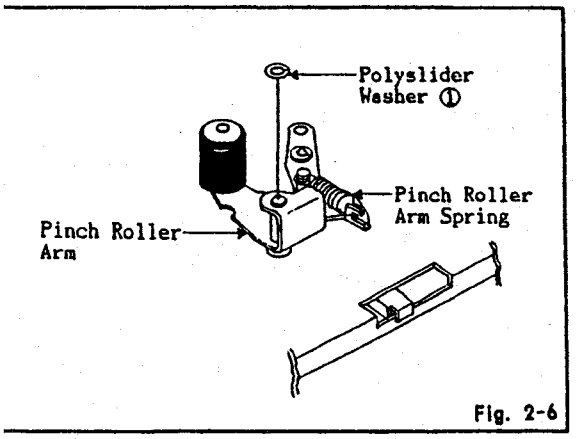


Fig. 2-6

·8: CAPSTAN DD UNIT

ɪMOVAL

Remove the reel belt.
Remove the solder "A" positions, remove the screws ① and then remove the deck bottom PCB.
Remove the loading motor belt ②.
Remove the screw ④, then remove the bracket worm 3.
Pull the hook ③ in the direction of arrow, then remove the worm. **(Refer to Fig. 2-7-A)**
Remove the screws ①, then remove the capstan DD unit. **(Refer to Fig. 2-7-B)**
(Be sure to support the capstan DD unit with your hand.)

ɪSTALLATION

Install new capstan DD unit in reverse steps of REMOVAL.

ɔIE

. Do not bend the limiter post.
. Use the specified screw held to the DD unit.
. Avoid getting grease on the reel belt.
. Be sure to install in the EJECT position. **(Refer to Fig. 2-7-D, E)**
. Install in the position where the capstan DD unit PCB reaches to the "B" position. **(Refer to Fig. 2-7-A)**
. When installing the worm, be sure to unlock the hook ③ in the direction of arrow, and the cam 1 and cam 2 must be meshed smoothly. **(Refer to Fig. 2-7-A)**
. When installing the deck bottom PCB, be sure to install the rotary switch in the EJECT position.
The EJECT position is the point where the "A" tooth is aligned to "B".
(Refer to Fig. 2-7-C)

HECK AFTER INSTALLATION

. Check if tape running is normal in PLAY mode.
. Check if FF/REW mode works normally.

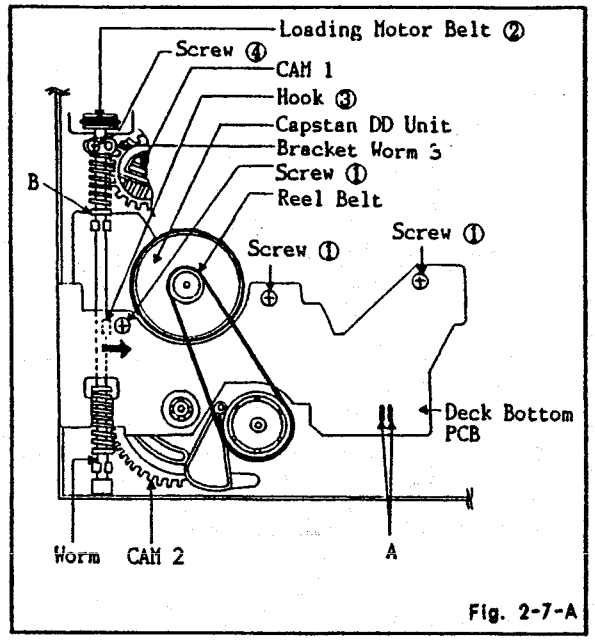


Fig. 2-7-A

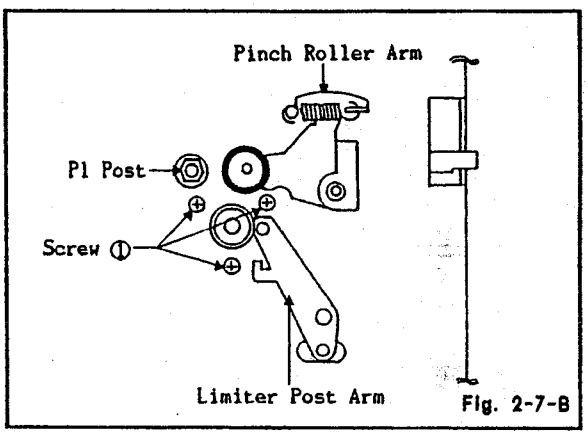


Fig. 2-7-B

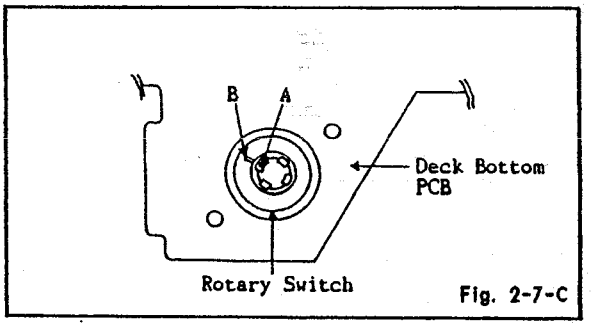


Fig. 2-7-C

MECHANICAL ADJUSTMENTS

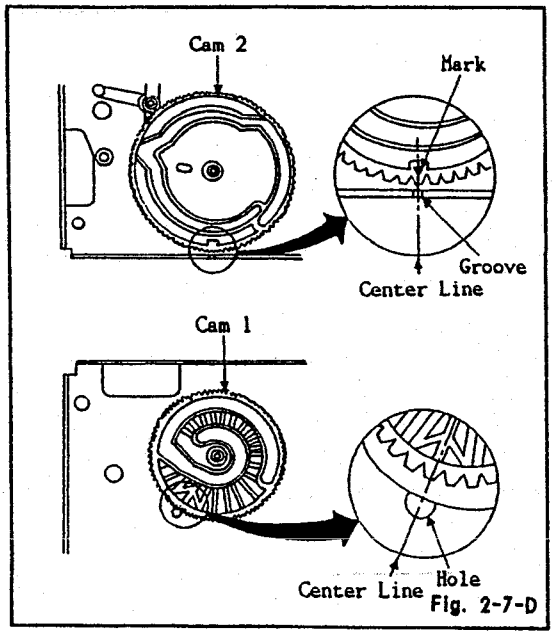


Fig. 2-7-D

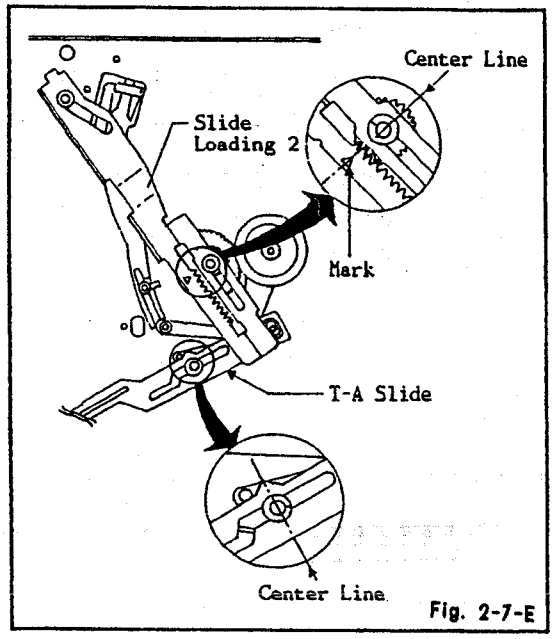


Fig. 2-7-E

2-9: TRANSISTOR PCB

REMOVAL

1. Insert a small flat-blade screwdriver into the transistor spring as shown in Fig. 2-8.
2. Hold both edges of the transistor PCB ("A" part) with your fingers and pull out the transistor PCB while turning the driver.

INSTALLATION

Install new transistor PCB in reverse steps of REMOVAL.

NOTE

1. The unit should be unplugged from the AC outlet.
2. Do not scratch or mar the cylinder.
3. Be careful not to split the transistor PCB.
4. If the transistor spring is broken when holding or removing the transistor PCB, replace with a new one.

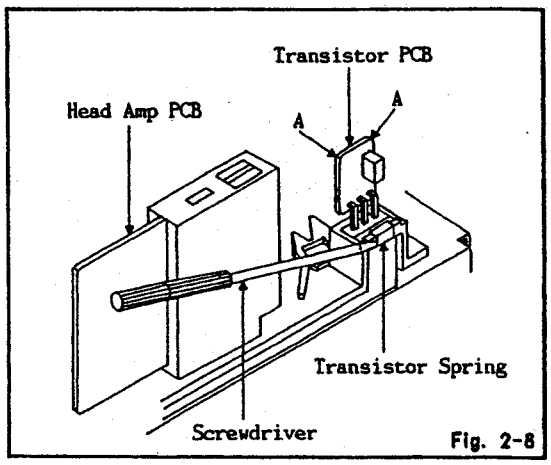


Fig. 2-8

3. CONFIRMATION AND ADJUSTMENT

3-1: CONFIRMATION OF FAST FORWARD TORQUE

CONFIRMATION

1. Set torque gauge (JG002G) on take-up reel disk, and place unit in FAST FORWARD mode. (Refer to Fig. 3-1)
2. Confirm that torque is more than 800g/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the FAST FORWARD button and the reel disk will begin to turn.

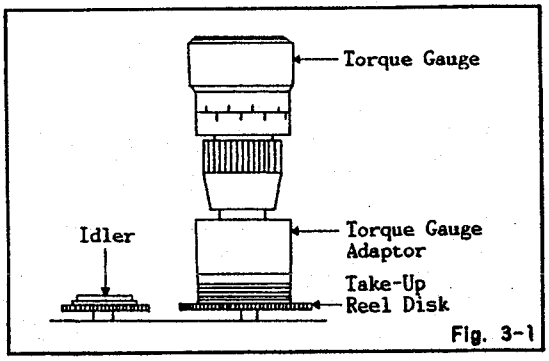


Fig. 3-1

3-2: CONFIRMATION OF REWIND TORQUE

CONFIRMATION

1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge (JG002G) on supply reel Disk, and place the unit in REWIND mode. (Refer to Fig. 3-2)
3. Confirm that torque is more than 800g/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the REWIND button and the reel disk wi begin to turn.

MECHANICAL ADJUSTMENTS

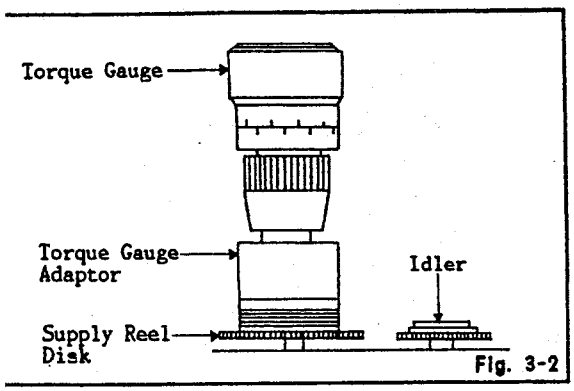


Fig. 3-2

-3: CONFIRMATION OF PLAYBACK TAKE-UP TORQUE

ONFIRMATION

. Set the torque gauge (JG0002F) on the rewind reel disk, then check PB mode.
. Make sure that the torque covers the range, 60~150g/cm.

-4: CONFIRMATION OF REEL BRAKE TORQUE

ONFIRMATION (Refer to Fig. 3-3-A)

Take-Up Reel Brake)

. Set to STOP mode.
. Set the torque gauge (JG0002G) to the take-up reel and turn it counter-clockwise.
. Confirm that it is more than 200g/cm at that time.

ONFIRMATION (Refer to Fig. 3-3-B)

Supply Reel Brake)

. Set to STOP mode.
. Set the torque gauge (JG0002G) to the supply reel and turn it clockwise.
. Confirm that it is more than 200g/cm at that time.

IOTE

Separate the idler from the reel and confirm the brake torque.

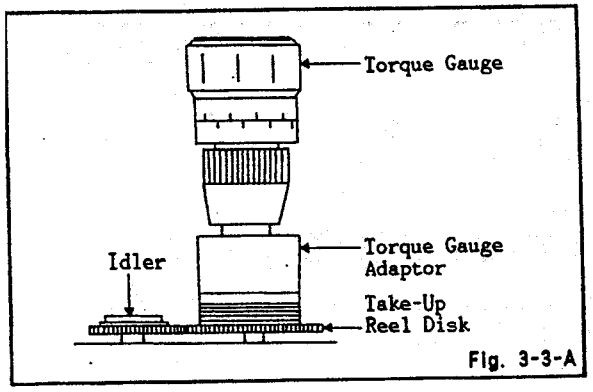


Fig. 3-3-A

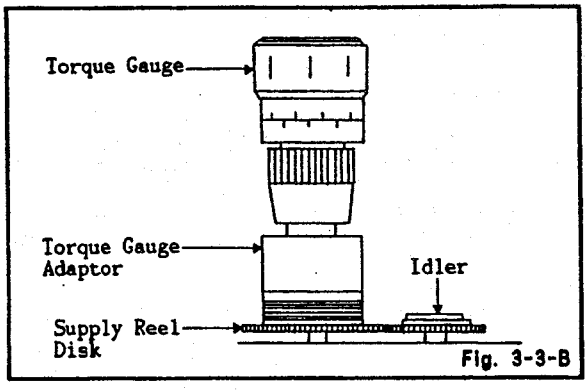


Fig. 3-3-B

NOTE

Refer to the table below for possible cause of problems when confirmation cannot be made for indicated items.

CONFIRMATION ITEM	CHECK POINT (REPLACEMENT)
3-1 3-2 3-3	Capstan belt may be stretched. Clutch may be worn out (if so, change reel disk.) Idler ass'y may be worn out.
3-4	Main brake belt may be worn out.

3-5: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

ADJUSTMENT

1. Turn the POWER SW ON.
2. Set the master plane (JG022) at mechanism framework, taking care not to scratch the drum, as shown in Fig. 3-4-A.
3. Confirm that the reel disk is lower than "A" of the reel disk height adjustment jig, (JG024) on the master plane and higher than "B" as shown in Fig. 3-4-B.
4. When it does not satisfy above items, adjust to less than 7.5±0.2mm with the height adjustment washer.

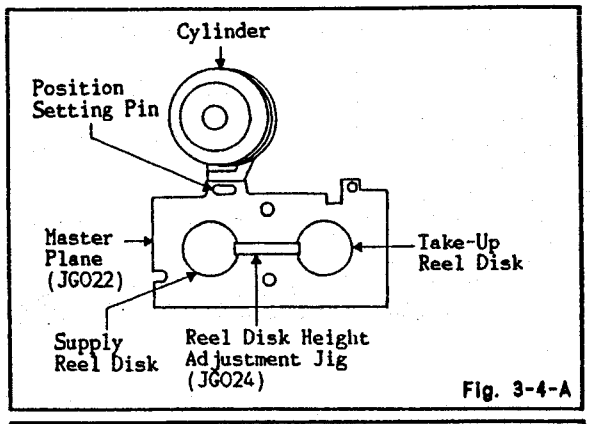


Fig. 3-4-A

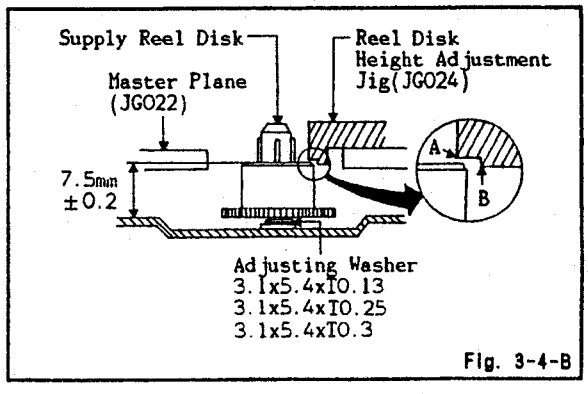


Fig. 3-4-B

MECHANICAL ADJUSTMENTS

3-6: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

CONFIRMATION

1. Turn on the power and set to the PLAY mode by using the tension post adjustment jig (JG036).
2. As soon as the guide rollers, L, R begin to draw the tape from the cassette, the tension post shall move to the left, thus loading will start.
3. Move the tension band adjuster to the "A" or the "B" direction to set tension post adjusting jig red line to the round of the tension post. **(Refer to Fig. 3-5)**
4. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

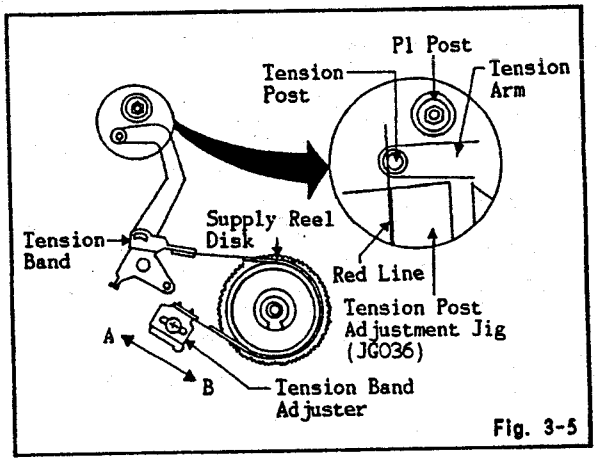


Fig. 3-5

3-7: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

CONFIRMATION

1. Load a E-60 cassette tape recorded in standard speed mode
2. Set the unit to the PLAY mode.
3. Install the tentelometer as shown in **Fig. 3-6.** Confirm the value is within 25~35g/cm at this time.
4. Confirm the video tape is running tight on P1 post.
5. Confirm there is no sag or damage on edges of the tape both in the beginning and ending of the video tape.
6. Adjust when it does not satisfy the above items.
7. Set the tension arm spring to "B" direction when the tentelometer indicates less than 25g/cm. **(Refer to Fig. 3-6)**
   Set the tension arm spring to "A" direction when the tentelometer indicates more than 35g/cm. **(Refer to Fig. 3-6)**

NOTE

The tentelometer should not touch F/E Head, cylinder or other components in the tape path.

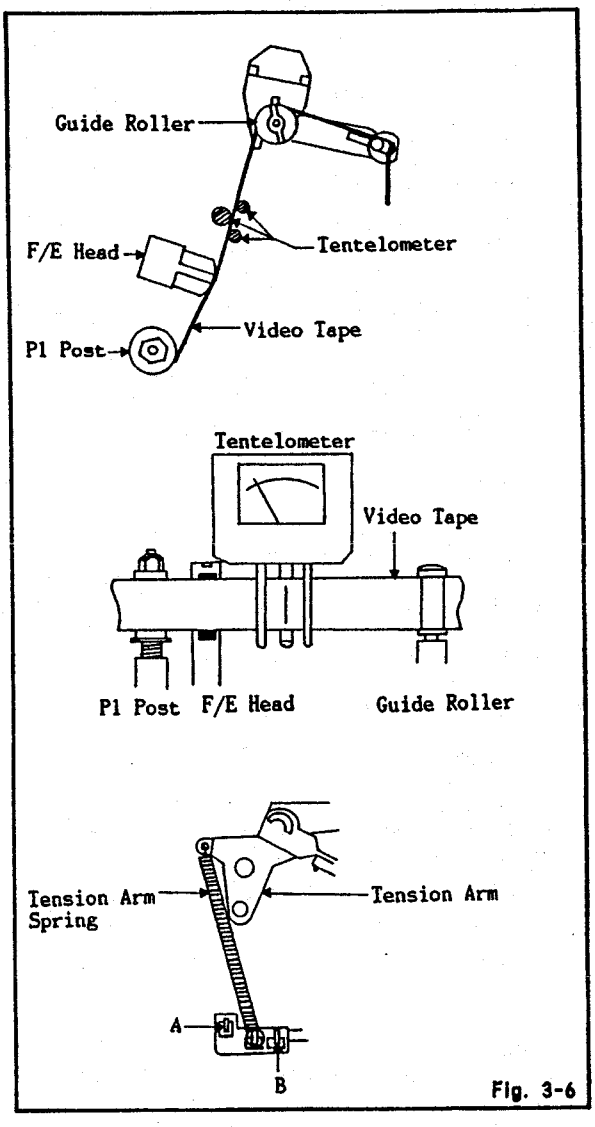


Fig. 3-6

4. TAPE RUNNING CONFIRMATIO AND ADJUSTMENT

Tape running is adjusted precisely at the factory. Normally, it is not necessary to make adjustments. It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced because of extensive usage or failure.

4-1: P1 POST

ADJUSTMENT

1. Set to the EJECT mode. Install the P1/P4 post height adjustment jig (JG035) to the main chassis.
2. Adjust the P1 post with P1/P4 post height adjustment jig "A" part. **(Refer to Fig.4-1)**

4-2: P4 POST

ADJUSTMENT

1. Set to the EJECT mode. Install the P1/P4 post height adjustment jig (JG035) to the main chassis.
2. Adjust the P4 post with P1/P4 post height adjustment jig "B" part. **(Refer to Fig.4-1)**

MECHANICAL ADJUSTMENTS

OTE

. Adjust the guide roller. **(Refer to Item 4-3. Confirm there no crease on the edge of the tape).**
. Do not move the nut.
. Fix P4 post with screw lock.
. Adjust the tape running. **(Refer to Item 4-6)**

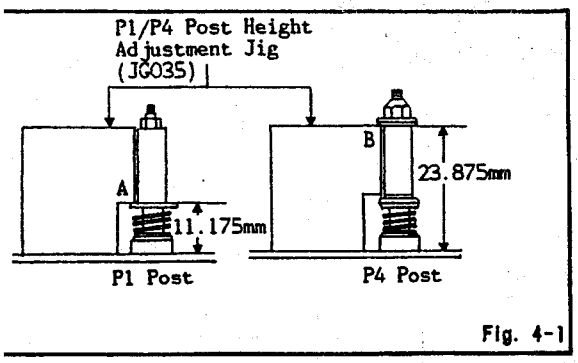


Fig. 4-1

-3: GUIDE ROLLER

DJUSTMENT

. Switch on main power and then connect monitor output cord and video input cord to proper positions.
. Insert the VHS adjustment tape (JG001) into the unit.
. Connect CH-1 and CH-2 of oscilloscope to envelope output and to the test point of switching pulse, respectively.
. Carry out this adjustment in PLAY mode.
. Trigger with SW pulse and observe the envelope. **(Refer to Fig. 4-2-A)**
. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control knob is turned. (Use the adjustment screwdriver JG005).
. When the tracking control knob is turned (the point that the envelope waveform starts to reduce), adjust the envelope so that its A:B ratio is better than 10:7. **(Refer to Fig. 4-2-B)**
. Adjust the PB switching position (ELECTRICAL ADJUSTMENS : ITEM 2-1) in the PLAY mode.

OTE

After adjustment, confirm and adjust A/C head tilt. **(Refer to Item 4-4)**

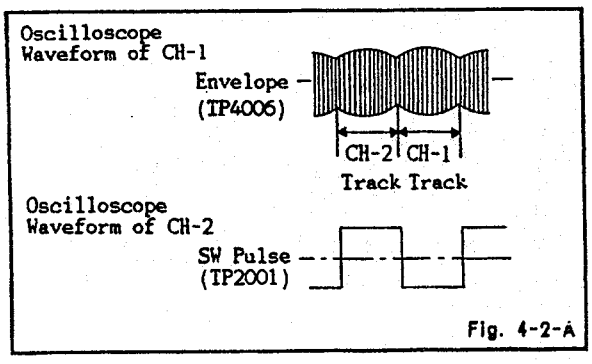


Fig. 4-2-A

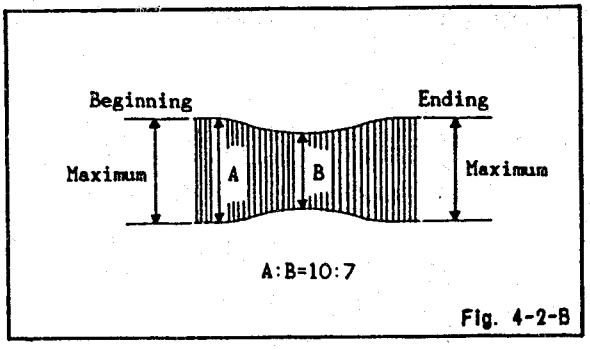


Fig. 4-2-B

4-4: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT

ADJUSTMENT

When the tape is running abnormally, perform the following adjustments.

1. Check the tape running condition with the unit in the PLAY mode using the E-60 tape.
2. Confirm that there is no crease on the tape between the guide post and guide roller(R) and the tape is running smoothly. (It is absolutely impossible to get satisfactory sound if the tape is distorted between the A/C head and guide post.)
3. If the tape still does not run smoothly, turn the screw ① and adjust the tilt of the A/C head. Do not move the guide post. **(Refer to Fig. 2-2)**

4-5: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH

ADJUSTMENT

1. Playback a VHS adjustment tape (JG001) and observe the waveform at the audio output terminal.
2. Turn the screw ② slowly to change the height of the A/C head. Adjust the height so that the audio output becomes maximum. **(Refer to Fig. 2-2)**
3. Adjust the nut ④. **(Refer to Fig. 2-2)** until the height of the A/C head reaches the position against the tape as shown in **Fig. 4-3.**

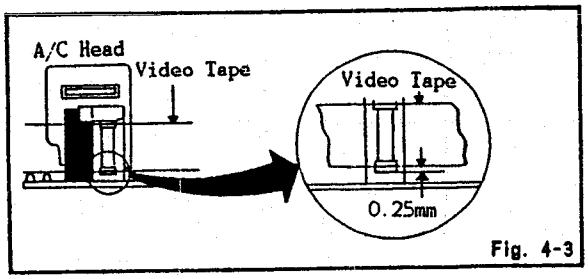


Fig. 4-3

4-6: TAPE RUNNING ADJUSTMENT

1. Adjust the height of reel disk. **(Refer to Item 3-5)**
2. Adjust the P1 post, P4 post. **(Refer to Item 4-1, 2)**
3. Confirm and adjust tension post position. **(Refer to Item 3-6)**
4. Adjust the guide roller. **(Refer to Item 4-3)**
5. Adjust the A/C head height and azimuth. **(Refer to Item 4-5)**
6. Adjust the A/C head tilt. **(Refer to Item 4-4)**
7. Set the tracking control to the center position. Turn X-nut adjustment screwdriver (JG021) until the envelope appears maximum.

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

1-1: Prepare the following measurement tools for the electrical adjustment.

1. Oscilloscope (2 channel type)
2. AC Voltmeter
3. Audio Oscillator
4. Frequency Counter
5. Spectrum Analyzer

2. ADJUSTMENT PROCEDURE

2-1: PB. SWITCHING POSITION

CONDITIONS

MODE - PLAYBACK
Input Signal - Standard Test Tape

NOTE

Tracking control should be set at click point.

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP2001** and CH-2 to **7 pin of CD8007.**
2. Playback the tape.
3. Adjust **VR2001** so that the waveform of the oscilloscope measures 6.5±0.5(H) at both leading and trailing edges.
(Refer to Fig. 2-1-A, B)

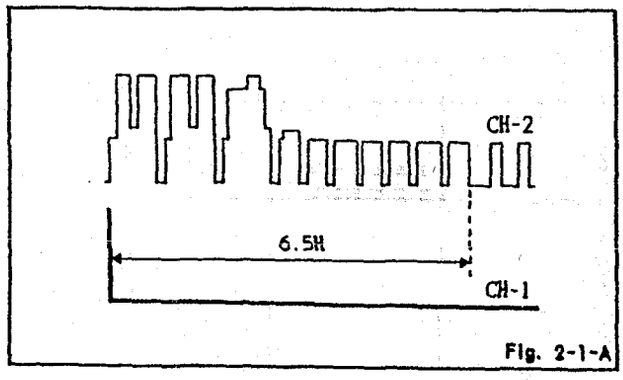


Fig. 2-1-A

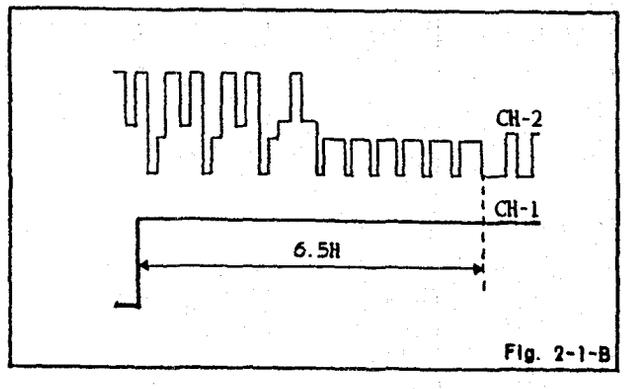


Fig. 2-1-B

2-2: TRACKING FIX

CONDITIONS

MODE - PLAYBACK
Input Signal - Standard Test Tape

NOTE

Tracking control should be set at click point.

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP2001** and CH-2 to **TP2003.**
2. Playback the tape.
3. Adjust **VR2002** so that the "T" portion measures -1.0±0.3msec.
(Refer to Fig. 2-2)

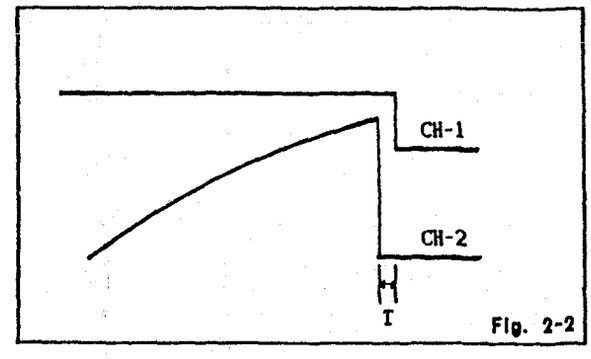


Fig. 2-2

2-3: PLAYBACK LUMINANCE LEVEL

CONDITIONS

MODE - PLAYBACK
Input Signal - Color Bar Test Tape

NOTE

Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect the oscilloscope to **7 pin of CD8007.**
2. Playback the tape.
3. Adjust **VR4003** so that the signal becomes 2.0±0.1Vp-p as shown in **Fig. 2-3.**

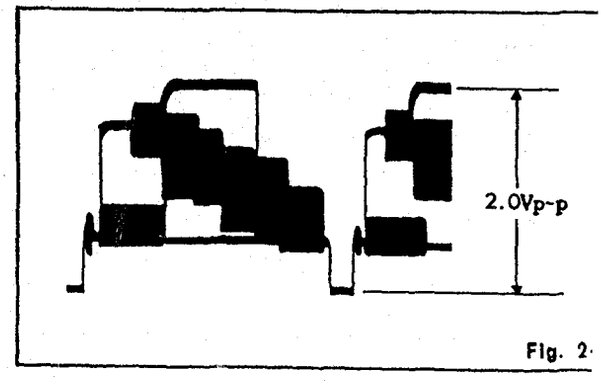


Fig. 2-

ELECTRICAL ADJUSTMENTS

4: NOISE CANCEL

NDITIONS

DE - PLAYBACK
put Signal - Color Bar Test Tape

TES

This adjustment must be done after adjustments in section 2-3.
Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.

STRUCTIONS

. Connect CH-1 of the oscilloscope to **TP4003** and CH-2 on the oscilloscope to **TP4004.**
. Reverse the waveform for CH-2 with an inverter and put both the waveforms for CH-1 and CH-2 together by pressing the ADD SW on the oscilloscope.
. Adjust the **VR4005** so that the waveform of CH-1 is straight as shown in **Fig. 2-4.**

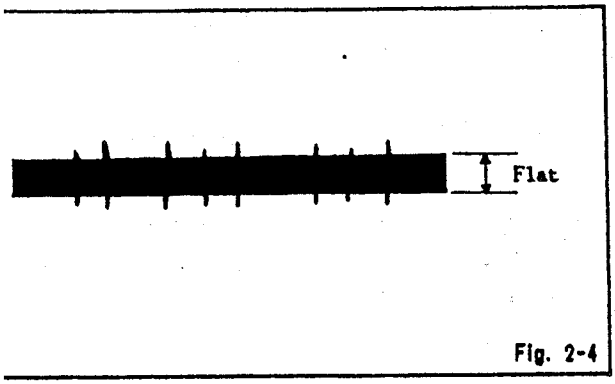


Fig. 2-4

-5: E-E LEVEL

ONDITIONS

ODE - STOP
nput Signal - PAL Color Bar

OTES

Video out (7 pin of CD8007) of the unit should be terminated with 75 ohm load.
Video in (5 pin of CD8007) of the unit should be terminated with 75 ohm load.

NSTRUCTIONS

. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
. Connect the oscilloscope to **TP4005.**
. Adjust **VR4004** so that the waveform measures 0.53±0.01Vp-p. **(Refer to Fig. 2-5)**

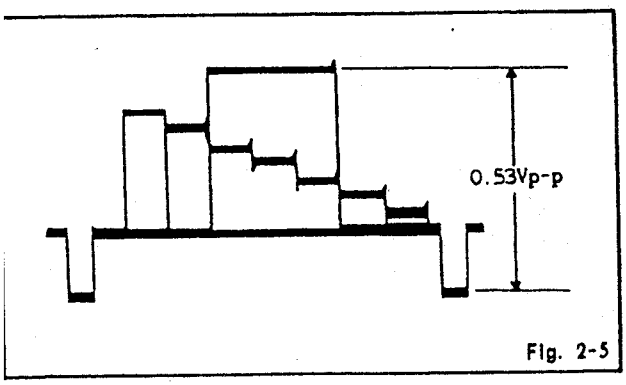


Fig. 2-5

2-6: CARRIER AND DEVIATION

CONDITIONS

MODE - STOP
Input Signal - PAL Color Bar

INSTRUCTIONS

1. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect **TP4001** to the input terminal on the spectrum analyzer, then adjust 3.8MHz and 4.8MHz as shown in **Fig. 2-6** with **VR4001** and **VR4002.**

VR4001 (CARRIER)
VR4002 (DEVIATION)

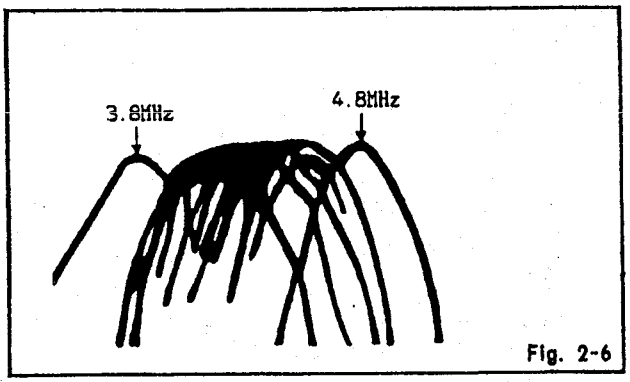


Fig. 2-6

2-7: RECORD CURRENT

CONDITIONS

MODE - RECORD(SP MODE)
Input Signal - PAL Color Bar

INSTRUCTIONS

1. Input the color bar signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect CH-1 on the oscilloscope to **TP4101** and connect the GND side to **TP4102.** Connect CH-2 on the oscilloscope to **7 pin of CD8007.** Reduce REC.-Luminance signal factors by turning **VR4102** fully counter-clockwise.
3. Adjust **VR4101** so that the cyan level becomes 30±2mVp-p as shown in **Fig. 2-7-A.**
4. Adjust **VR4102** so that the horizontal sync level becomes 120±5mVp-p as shown in **Fig. 2-7-B.**

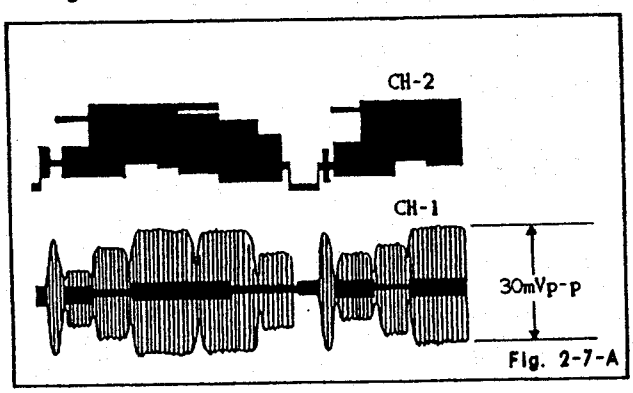


Fig. 2-7-A

ELECTRICAL ADJUSTMENTS

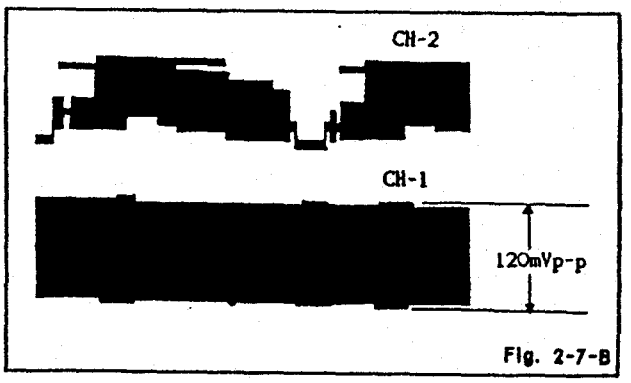


Fig. 2-7-B

2-8: AUDIO BIAS CURRENT

CONDITIONS

MODE - RECORD
Input Signal - Audio Signal : No Signal
Video Signal : PAL Color Bar

INSTRUCTIONS

1. Input the video signal to the **VIDEO IN (5 pin of CD8007).**
2. Connect the AC voltmeter to as shown then adjust the voltage to 3.3±0.1mVrms with **VR5002.(Refer to Fig. 2-8)**

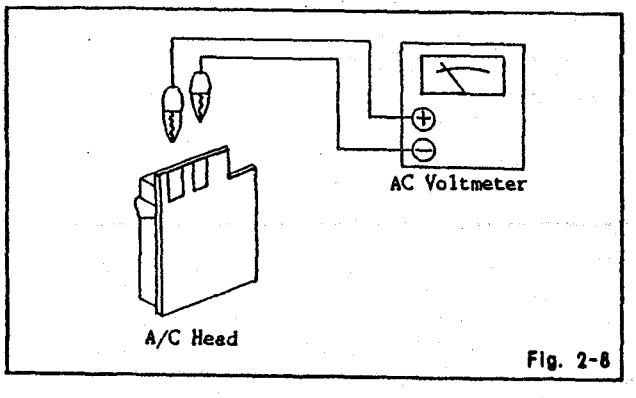


Fig. 2-8

2-9: PLAYBACK AUDIO LEVEL

CONDITIONS

MODE - Self(RECORD and PLAYBACK)(SP MODE)
Input Signal - Audio Signal : 1KHz 300mVrms
Video Signal : PAL Color Bar

INSTRUCTIONS

1. Input the video signal to the **VIDEO IN (5 pin of CD8007).**
2. Input the audio signal to the **AUDIO IN (1 pin of CD8007).**
3. Connect the AC voltmeter to **AUDIO OUT (3 pin of CD8007.)**
4. Record and then playback the audio signal as specified.
5. Adjust **VR5001** so that the playback output may become 340±10mVrms.

2-10: CLOCK

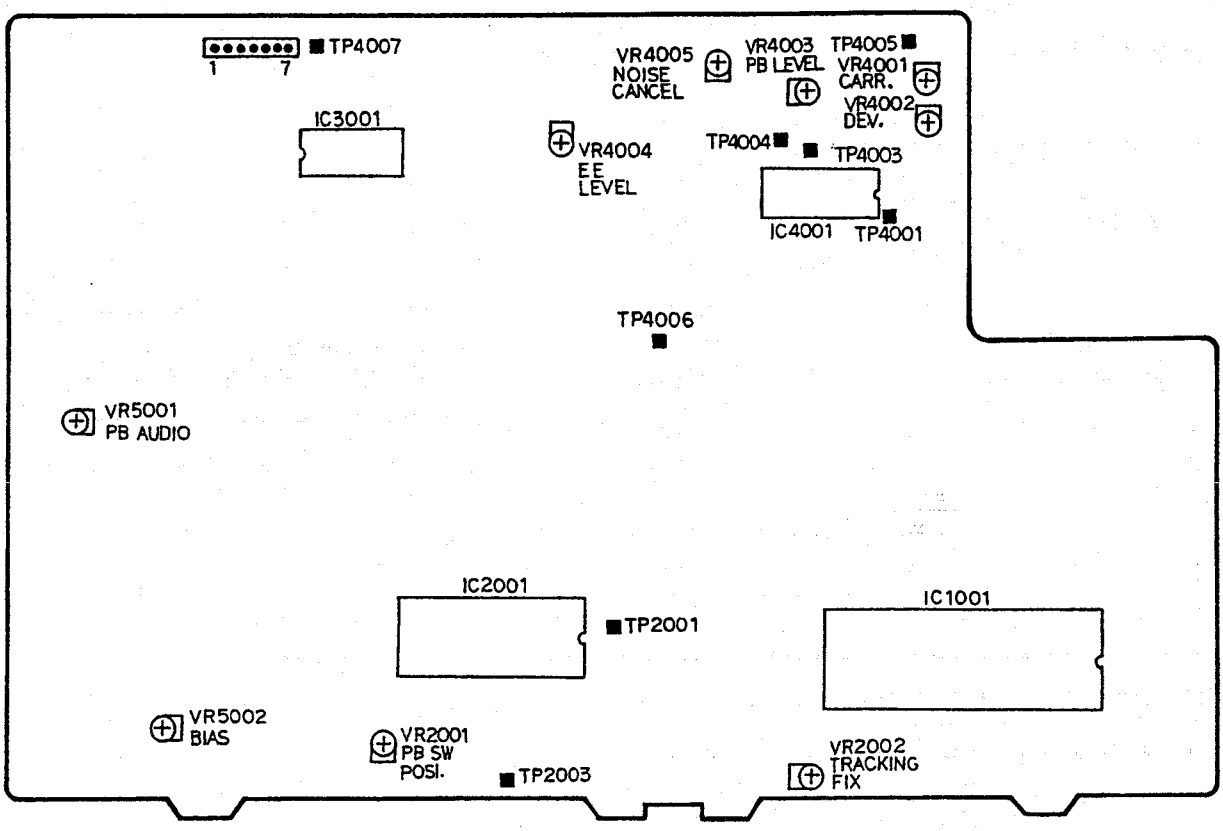
CONDITIONS

MODE - STOP
POWER ON
CLOCK SET

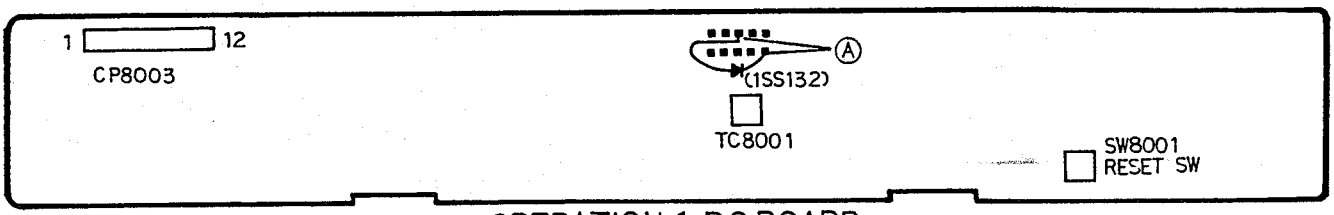
INSTRUCTIONS

1. Add the DIODE (1SS132) to the position Ⓐ before inserting the AC plug. Press the SYSTEM RESET SW (SW8001), then insert the AC plug.
(Refer to MAJOR COMPONENTS LOCATION GUIDE).
2. Connect the frequency counter to **1 pin of CD8003.**
3. Adjust **TC8001** so that the value of frequency counter is 174753.4±0.3Hz.
4. After the adjusting, remove the DIODE. Then reset the SYSTEM RESET SW.
(After the adjusting, if the SYSTEM RESET SW is not reset, the General Operating does not work).

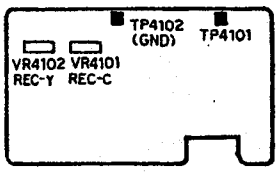
MAJOR COMPONENTS LOCATION GUIDE



MAIN P.C.BOARD



OPERATION 1 P.C.BOARD



HEAD AMP P.C.BOARD

ELECTRICAL ADJUSTMENTS

TV SECTION

3. BASIC ADJUSTMENTS

3-1: VIF AND AFT

NOTE
Connect input and output terminal of the Sweep-Marker Generator to circuit as shown in **Fig. 3-1-a**, then adjust it.

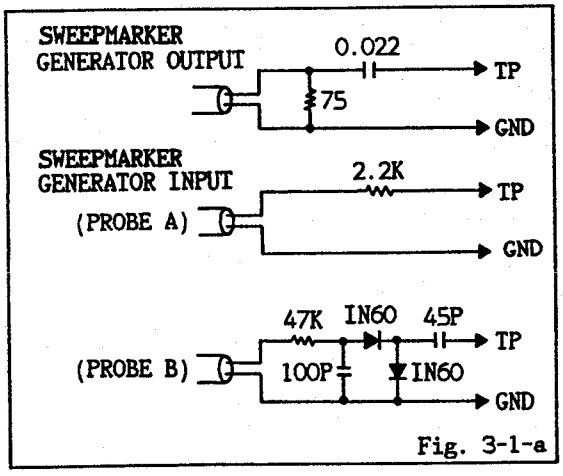
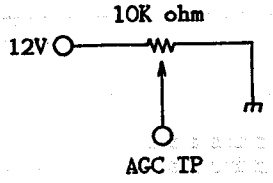


Fig. 3-1-a

1. Connect output terminal of the Sweep-Marker Generator to TP001.
2. Connect input terminal of the Sweep-Marker Generator to TP007.(PROBE A)
3. Connect the 10K ohm variable resistor to IF AGC terminal (TP004), 12V line and ground, then adjust to make the waveform of the oscilloscope readable.



4. Adjust **L204** until the waveform marker (38.9MHz) becomes as shown in **Fig. 3-1-b**

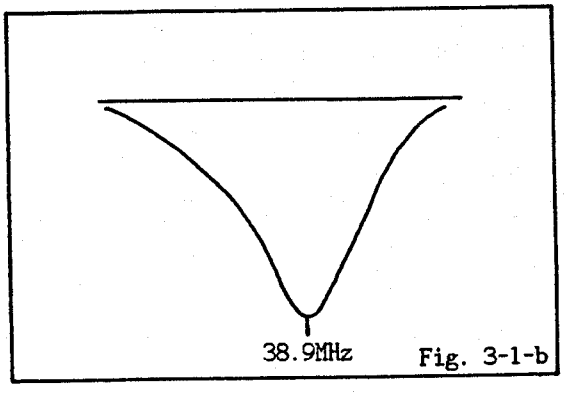


Fig. 3-1-b

5. Disconnect output terminal of the Sweep-Marker Generator from TP001, then connect it to TP of the Tuner Pack.
6. Disconnect input terminal of the Sweep-Marker Generator from TP007, then connect it to TP012.(PROBE B)
7. Adjust **L207** until the waveform markers (32.4MHz) becomes as show in **Fig. 3-1-c.**

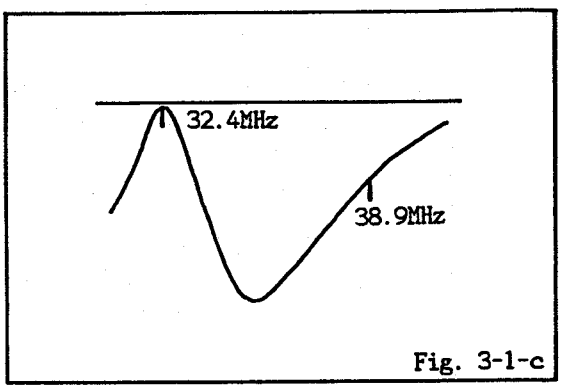


Fig. 3-1-c

8. Disconnect input terminal of the Sweep-Marker Generator from TP012, then connect it to TP007.(PROBE A)
9. Connect the 100 ohm resistor between TP009 and TP010.
10. Adjust **L206** until the waveform becomes as shown in **Fig. 3-1-d.**

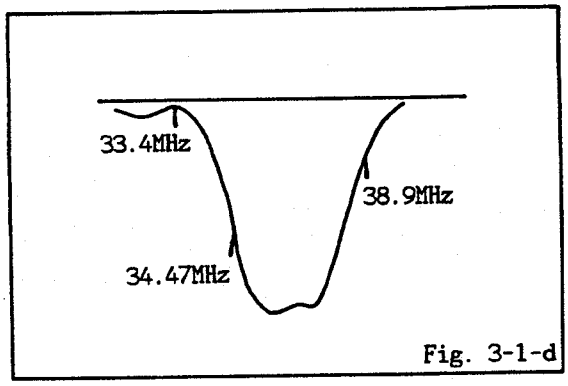


Fig. 3-1-d

11. Disconnect the 10K ohm variable resistor and 100 ohm resistor.
12. Input a 38.9MHz signal to TP of the Tuner Pack.
13. Connect the digital voltmeter to TP006.
14. Adjust **L203** until the AFT ON mode voltage is as same as the AFT OFF mode voltage.

3-2: RF AGC

NOTE
Adjust after performing adjustments in section 3-1.

3-2-A: In case of weak electric field.

1. Receive the noisy channel.
2. Adjust **VR201** until noise is at minimum.
3. Change the channel, confirm other channels are normal.

3-2-B: In case of strong electric field.
(Diagonal streaks indicate radio frequency interference.)

1. Adjust **VR201** until diagonal streaks are at minimum.
2. If there is still a problem after adjusting VR201, install the attenuator to the antenna terminals, then repeat step 1.
3. Confirm noise will appear.
4. Change the channel, confirm other channels are normal.

ELECTRICAL ADJUSTMENTS

3-3: CUT OFF

1. Receive the color bar pattern.
2. Adjust remote control until the bright and contrast controls are at minimum position.
3. Connect the oscilloscope to TP017.
4. Adjust the screen control until voltage is DC88V. **(Refer to Fig. 3-2)**

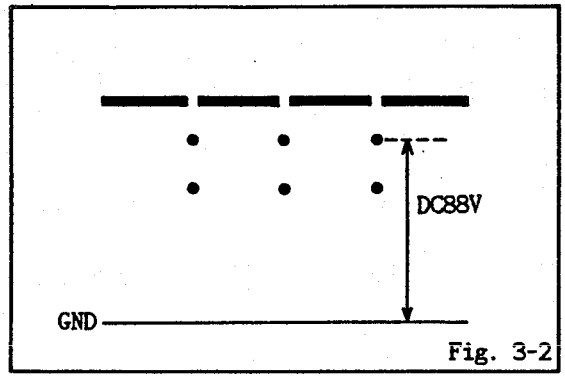


Fig. 3-2

3-4: FOCUS

1. Receive the broadcasting signal.
2. Adjust the Focus control until picture is distinct.

3-5: VERTICAL SIZE

1. Receive the Crosshatch Pattern from the Color Bar Generator.
2. Adjust the Bright and Contrast controls until the crosshatch pattern is distinct.
3. Adjust **VR401** until the center of crosshatch is square.
4. Receive broadcasting signal, then confirm picture is normal.

3-6: VERTICAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **VR403** until horizontal line of the color bar comes to around center of the CRT.

3-7: HORIZONTAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **VR402** until the color width of both of screen edges are equal.
3. Receive broadcasting signal, then confirm picture is normal.

3-8: HUE DELAY

1. Receive the DEM Pattern.
2. Connect the CH-1 on the oscilloscope to TP16 and CH-2 to TP15.
3. Adjust **L606** and **VR604** until the waveform is straight line. **(Refer to Fig. 3-3)**

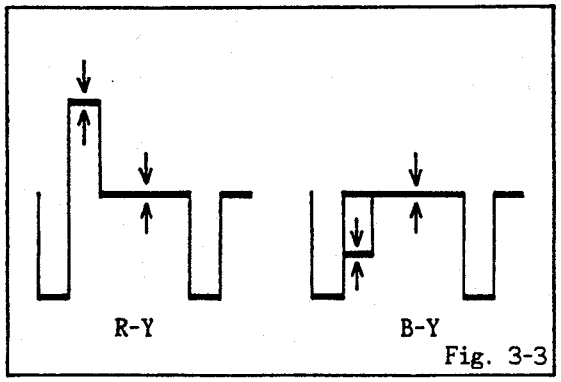


Fig. 3-3

3-9: SUB BRIGHT

1. Receive the Monochrome Pattern.
2. Press the NORMAL button on the remote control unit.
3. Adjust **VR606** until 0% of gray scale is black.

3-10: SUB COLOR

1. Receive the Color Bar Pattern.
2. Press the NORMAL button on the remote control unit.
3. Connect the oscilloscope to TP015.
4. Adjust **VR602** until red color level is 75%.

3-11: CONSTANT VOLTAGE

1. Receive the broadcasting signal.
2. Set each control to normal position.
3. Connect the digital voltmeter to **TP501**.
4. Adjust **VR501** unil the voltage is DC11.5V.

4. PURITY AND CONVERGENCE ADJUSTMENT

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

4-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 4-1)** If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

ELECTRICAL ADJUSTMENTS

4-2: PURITY

NOTE
Make these adjustments after doing adjustments in section 4-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets with the same angle to change to green on the screen center.
   Also, adjust the pair of purity magnets to equal the width of both ends color
3. Move the deflection yoke backward (To neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm the color concerning to the red and blue.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

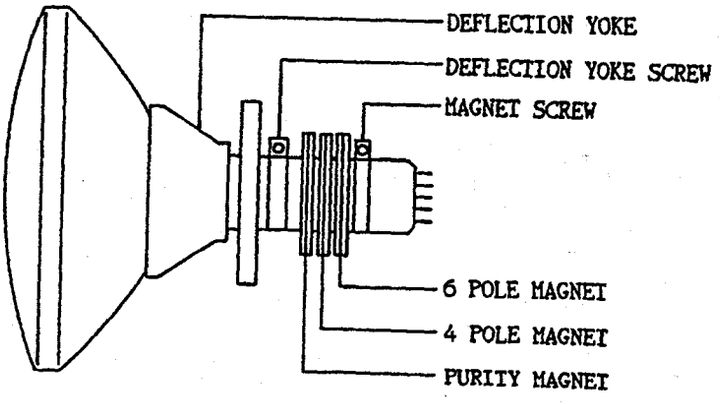


Fig. 4-1

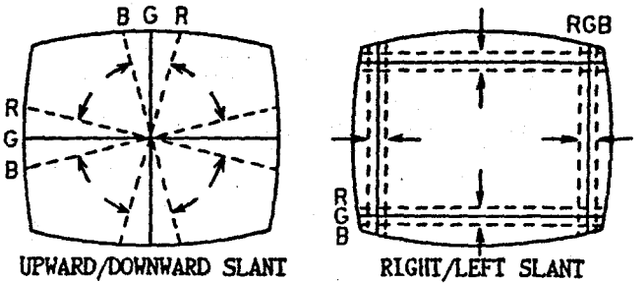
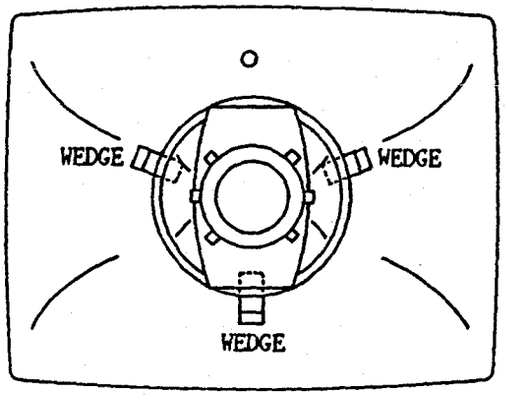


Fig. 4-2-a



WEDGE POSITION

Fig. 4-2-b

4-3: STATIC CONVERGENCE

NOTE
Make these adjustments after doing adjustments in section 4-2.

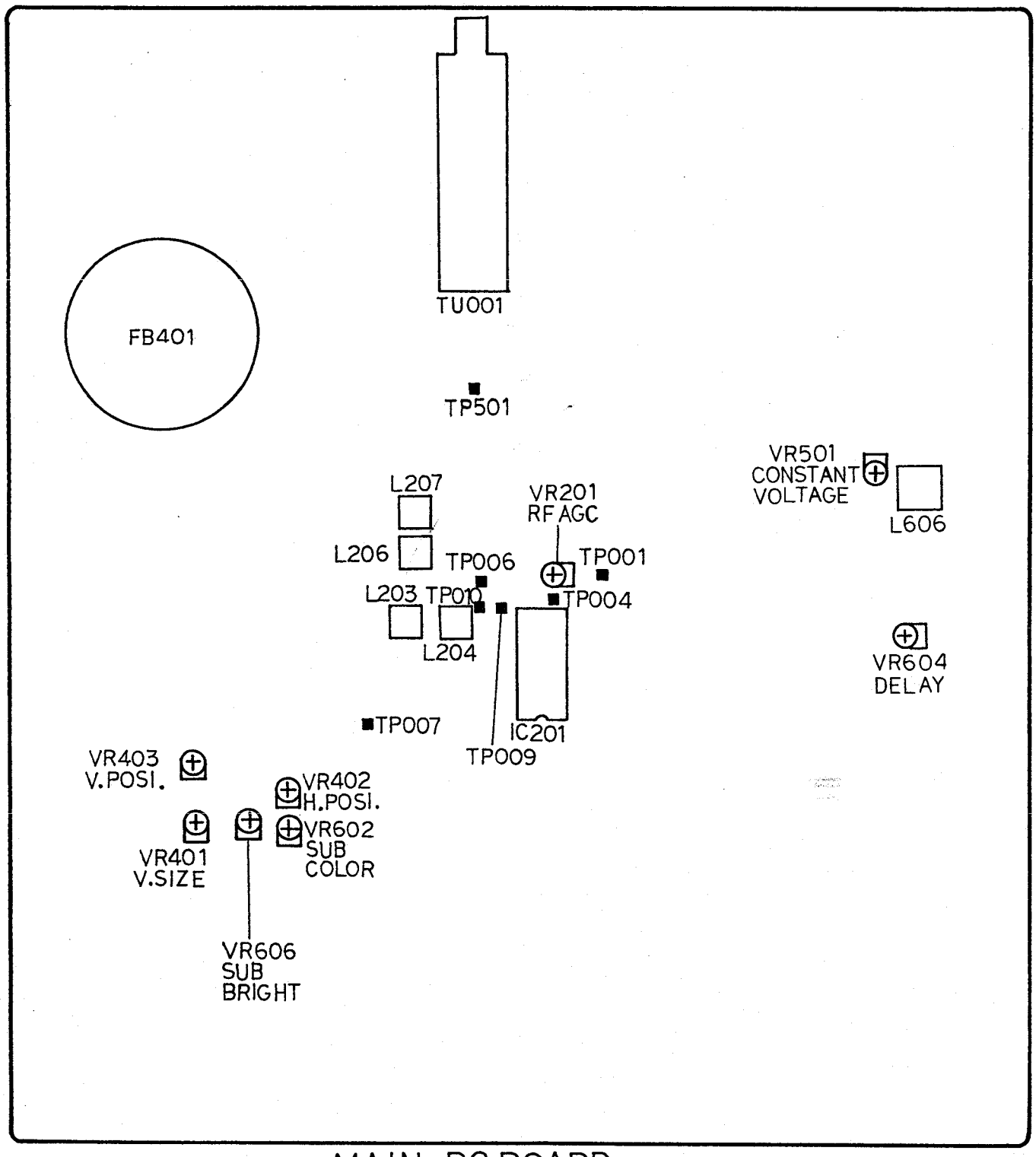
1. Receive the crosshatch pattern from color bar generator.
2. Combine red and blue of the 3 colors crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

4-4: DYNAMIC CONVERGENCE

NOTE
Make these adjustments after doing adjustments in section 4-3.

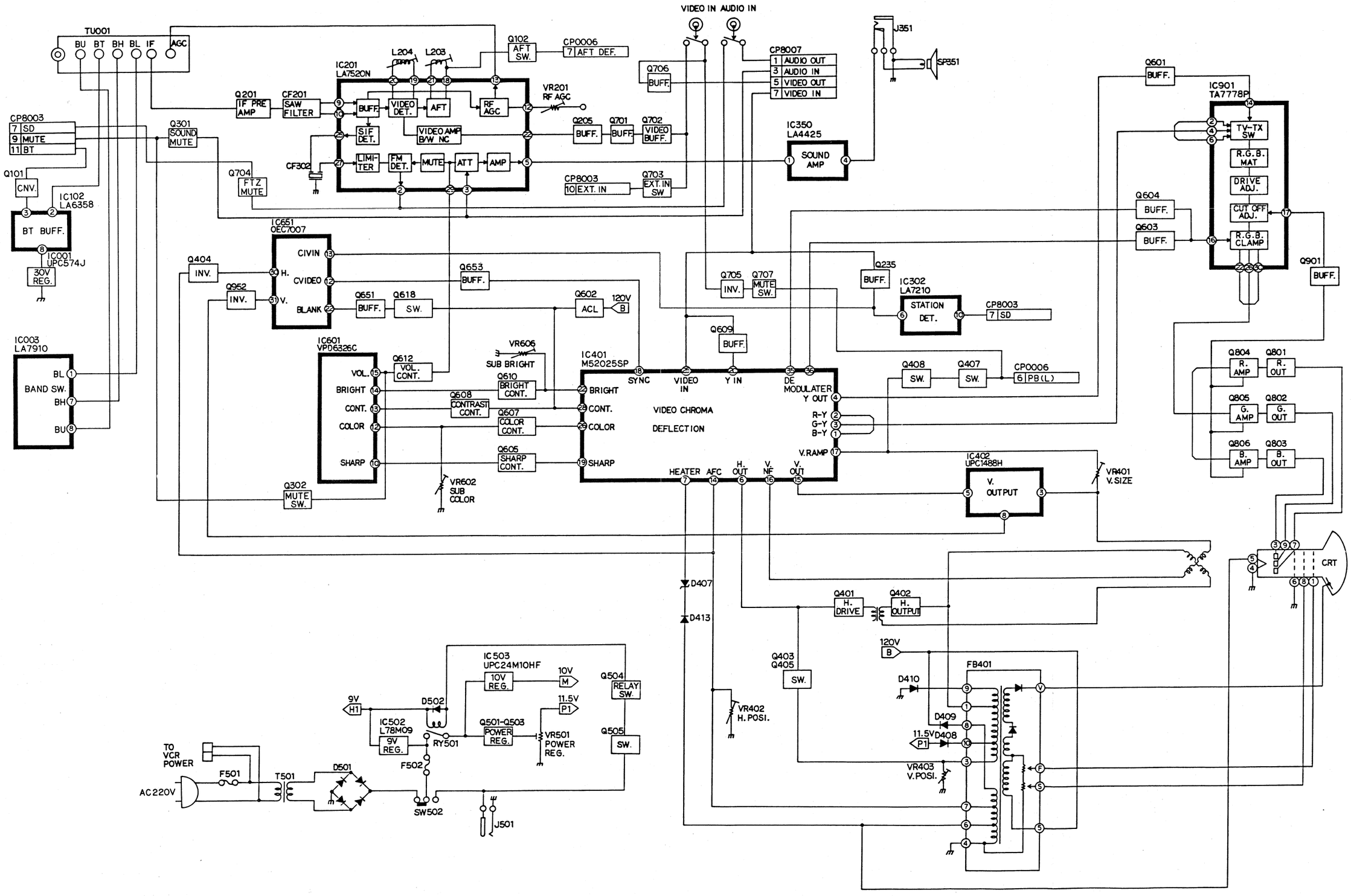
1. Adjust the differences around the screen by moving the deflection yoke upward/downward and to right/left. **(Refer to Fig. 4-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 4-2-b)**

MAJOR COMPONENTS LOCATION GUIDE

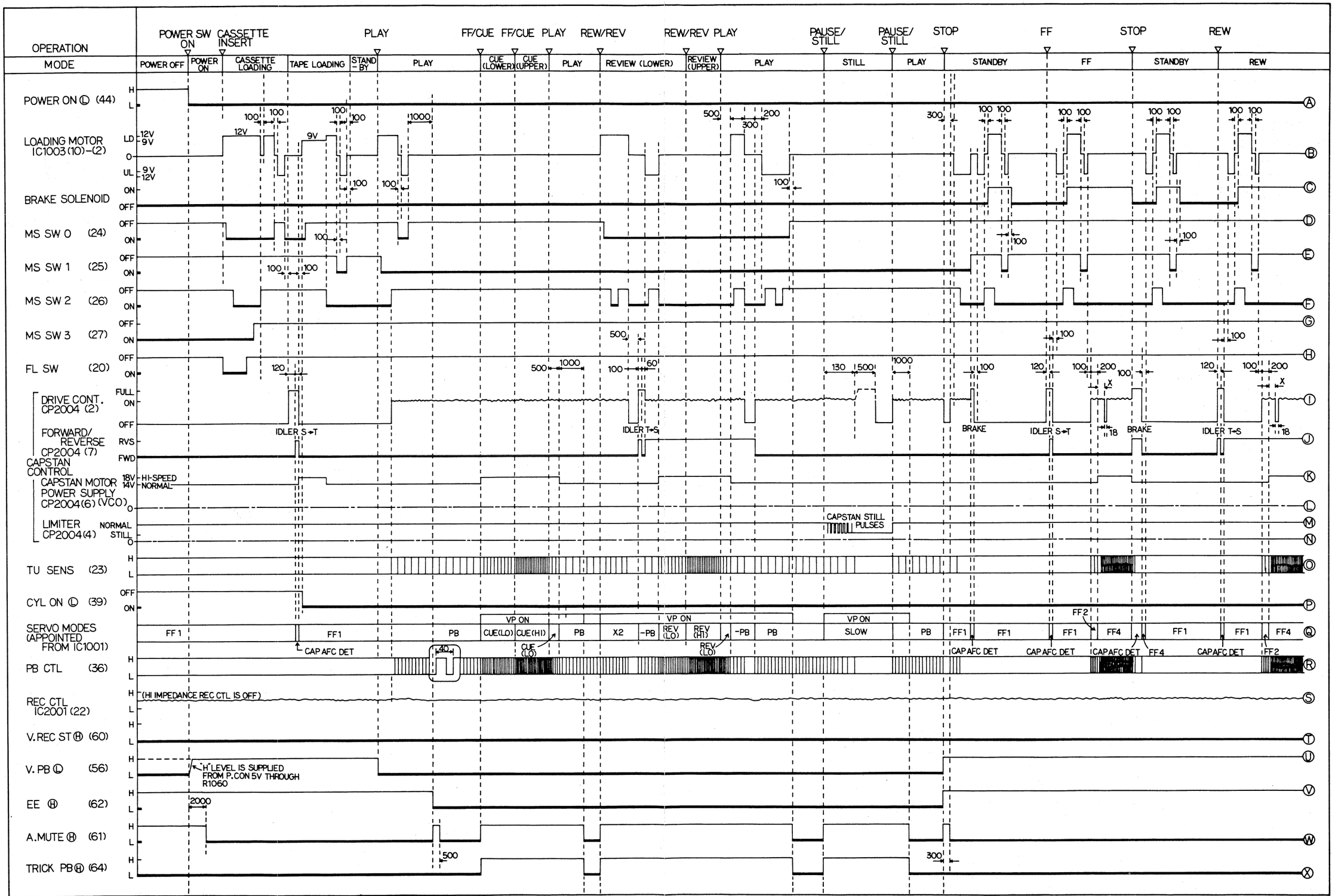


MAIN P.C.BOARD

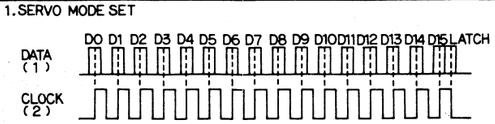
TV BLOCK DIAGRAM



TIMING CHART



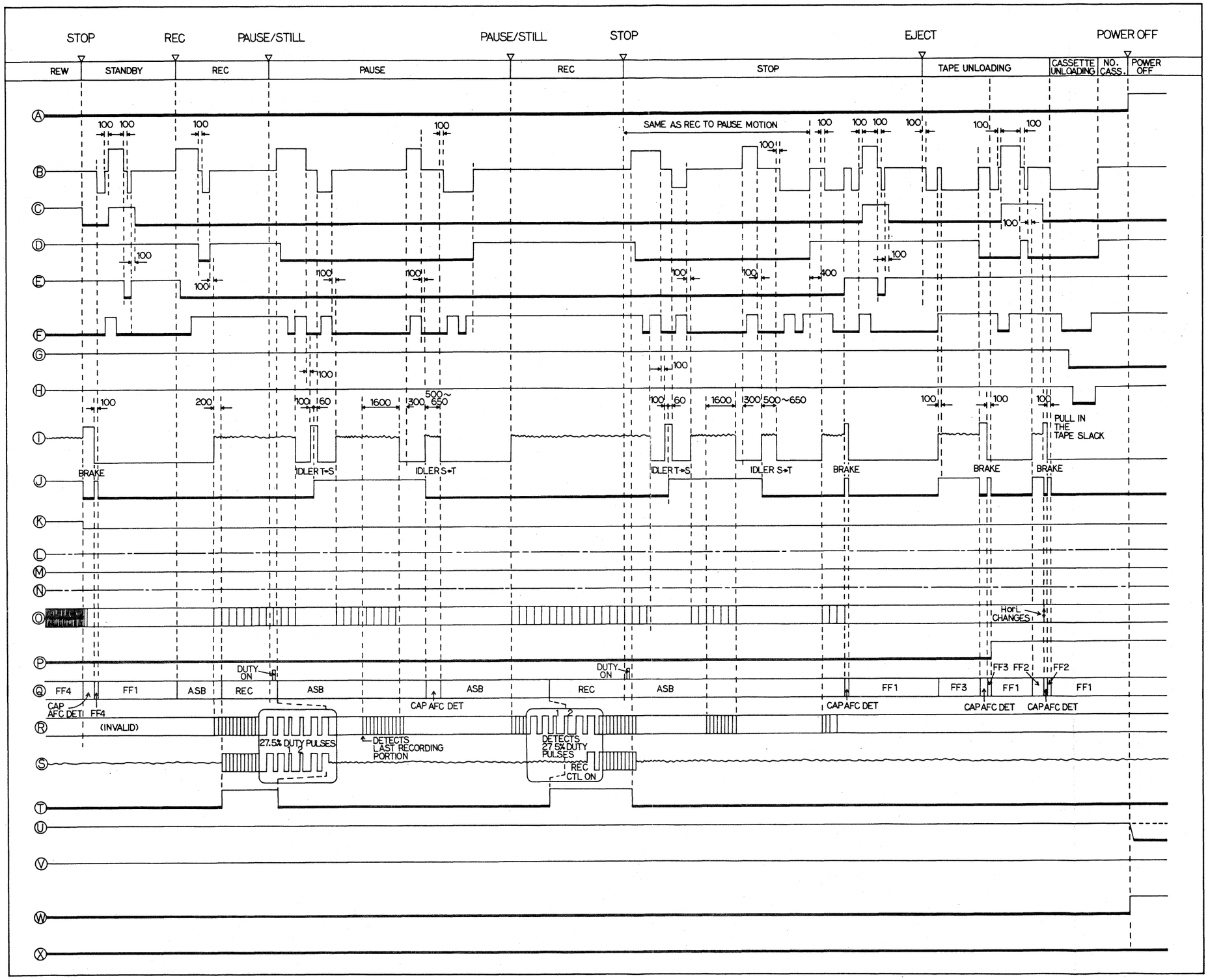
NOTE : 1. SERVO MODE SET



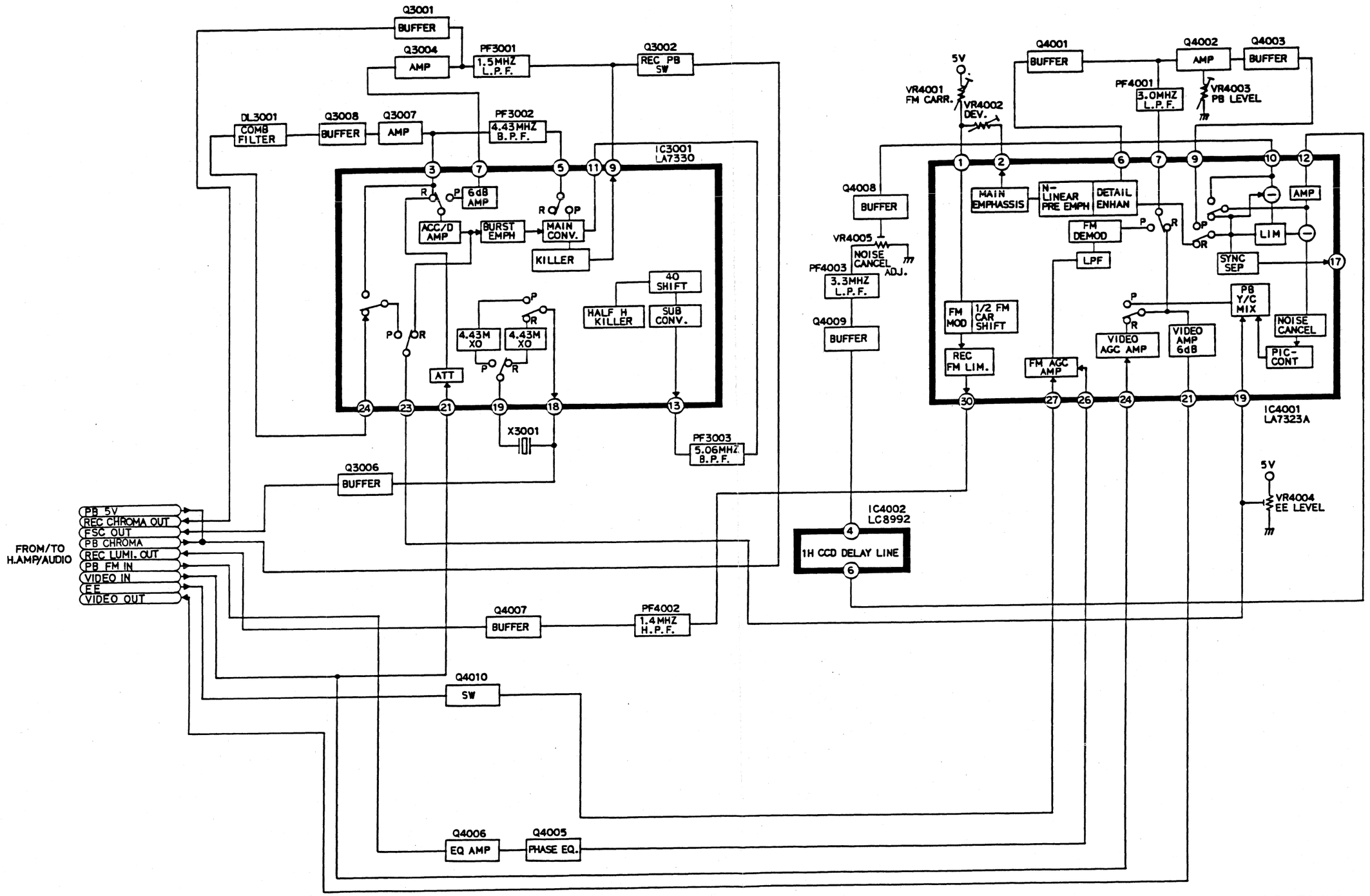
2. TIMING VALUES IN (ms)

3. TIMING WAVEFORMS
HIGH
LOW
STAY HIGH or LOW
ALTERNATELY HIGH and LOW

TIMING CHART



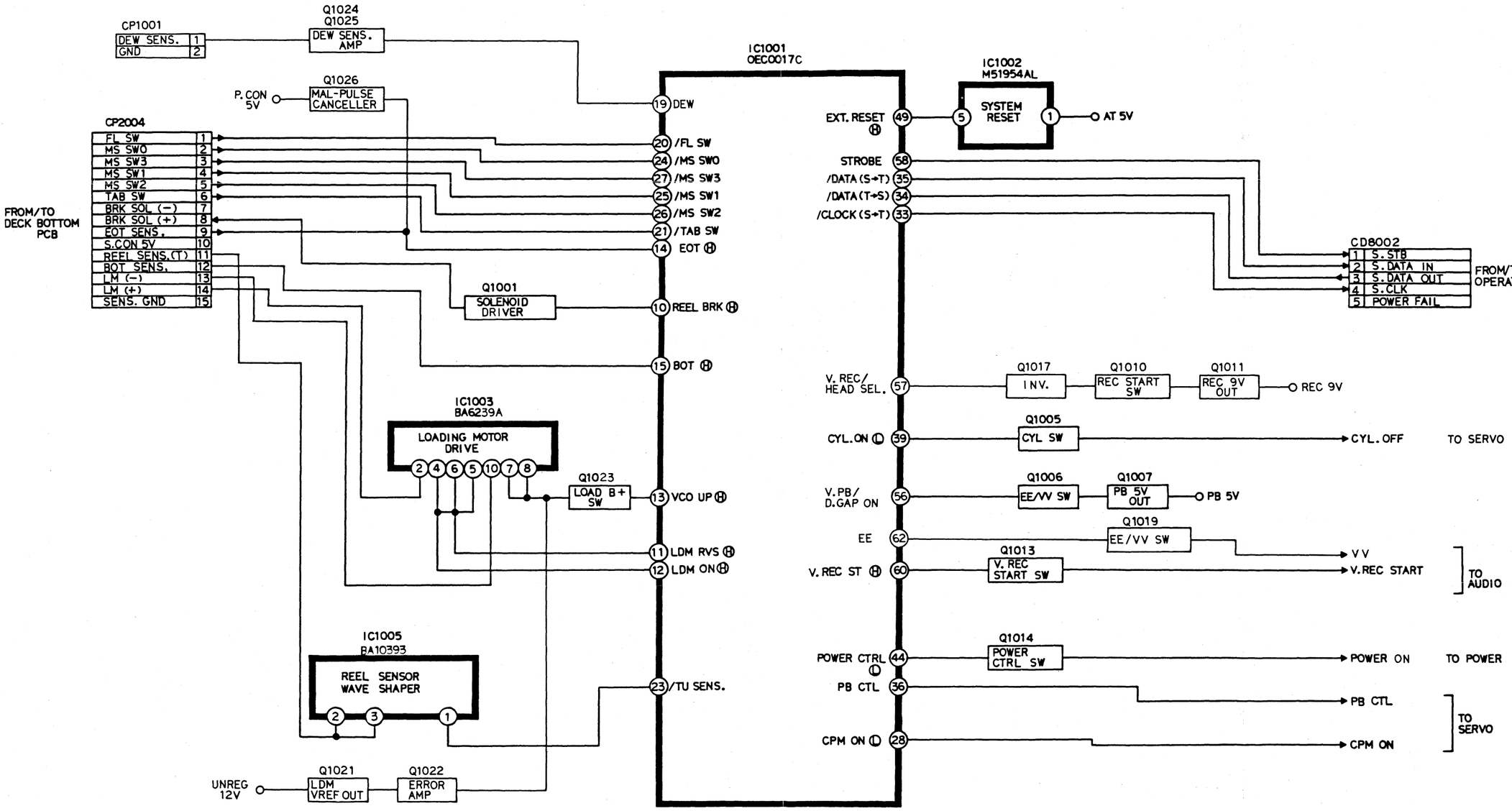
VCR Y.C. BLOCK DIAGRAM



VCR Y.C. BLOCK DIAGRAM

2-3743

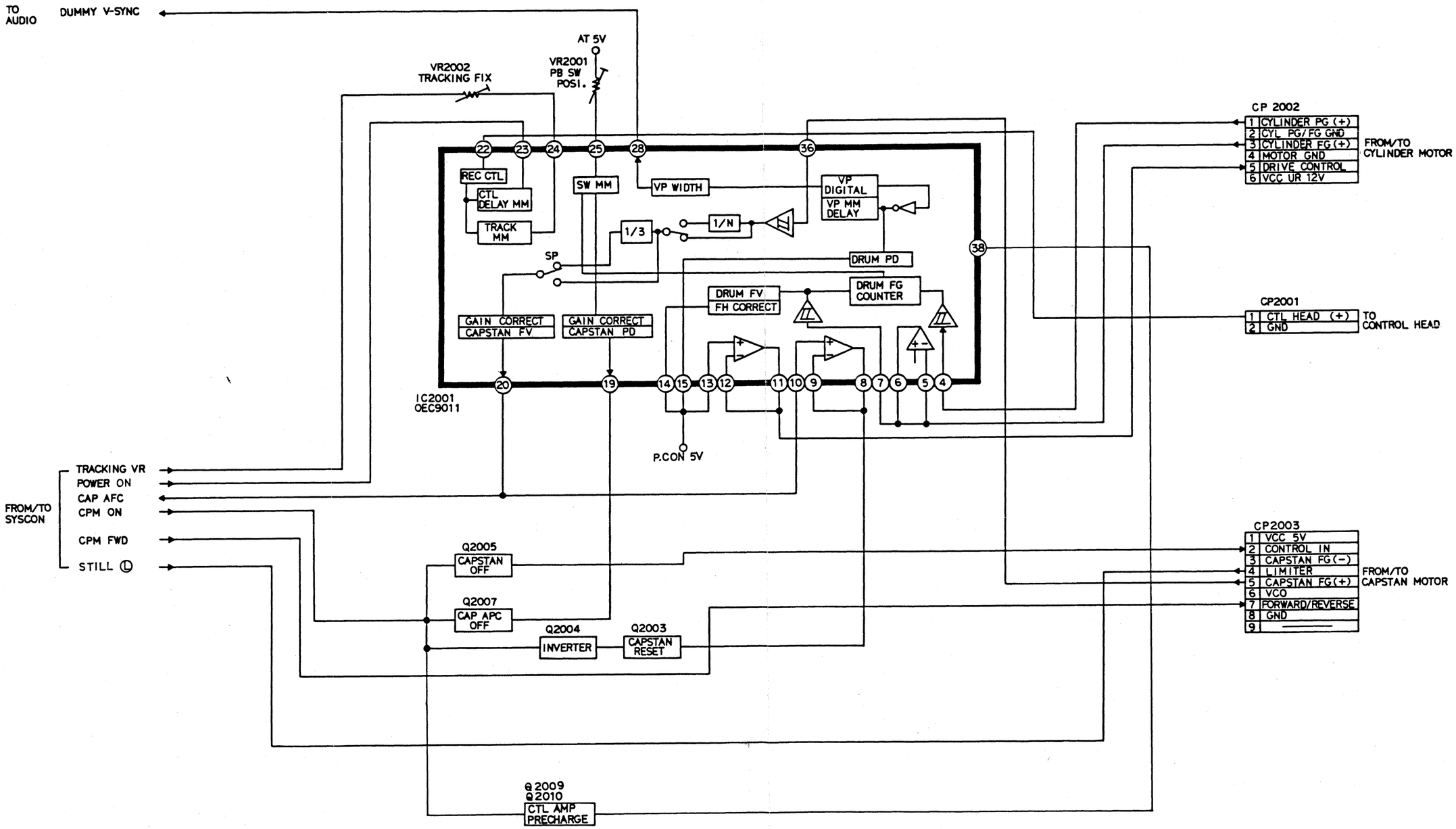
VCR SYSTEM CONTROL BLOCK DIAGRAM



VCR SYSTEM CONTROL BLOCK DIAGRAM

2-3737

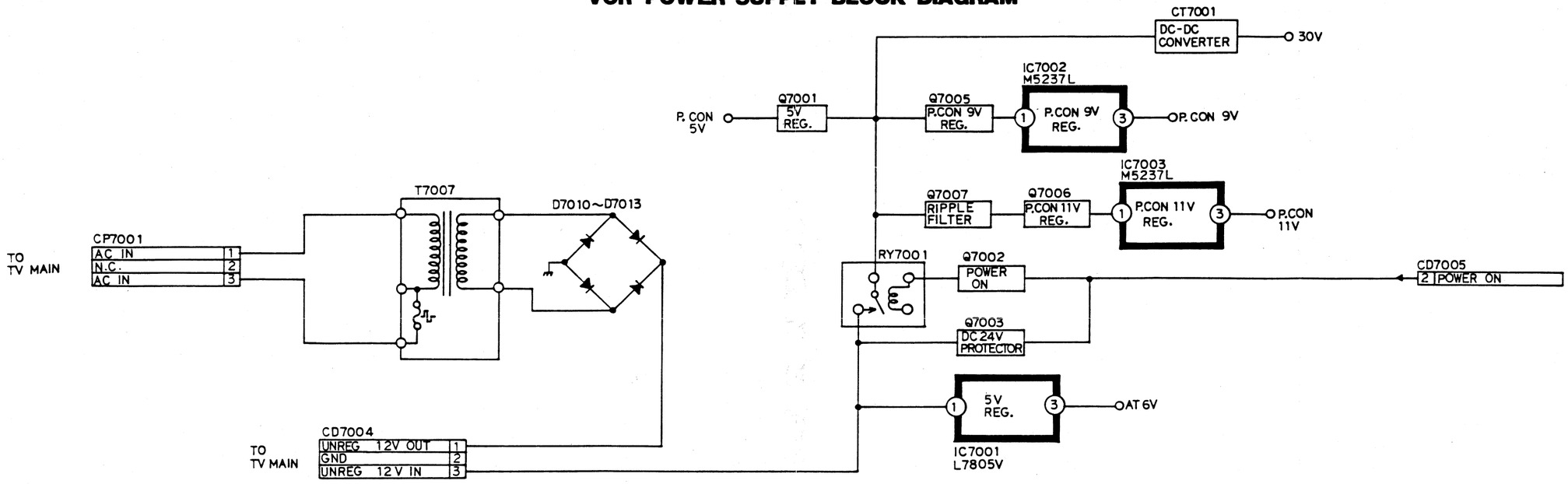
VCR SERVO BLOCK DIAGRAM



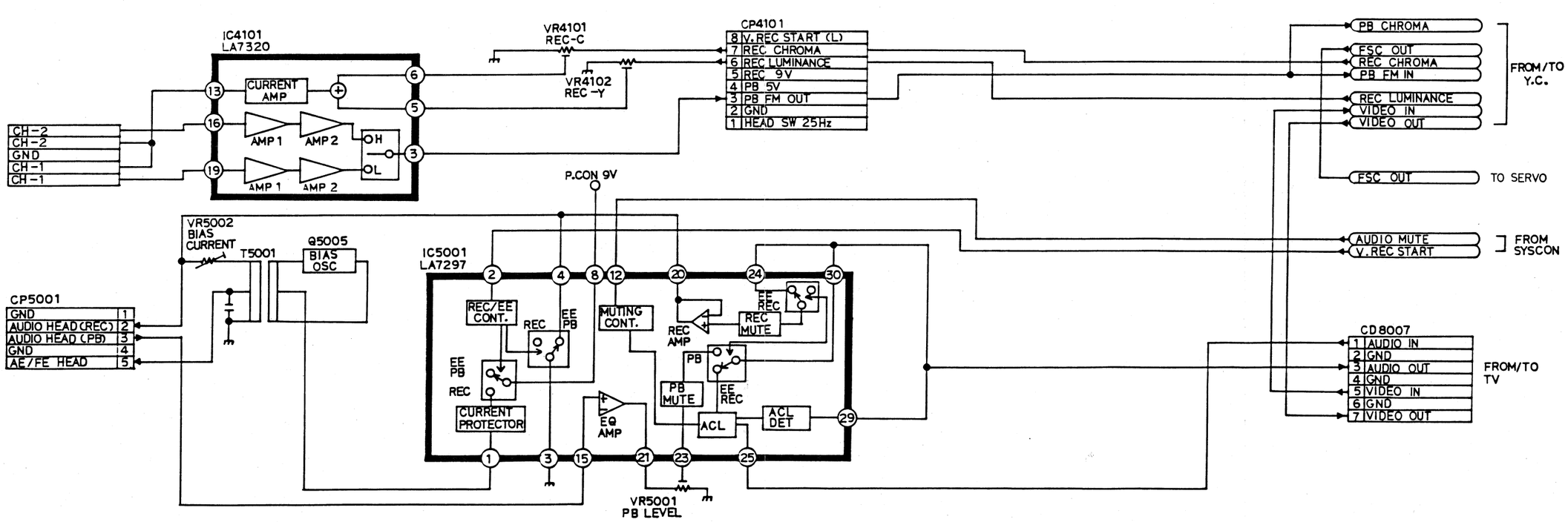
VCR SERVO BLOCK DIAGRAM

2-3744

VCR POWER SUPPLY BLOCK DIAGRAM

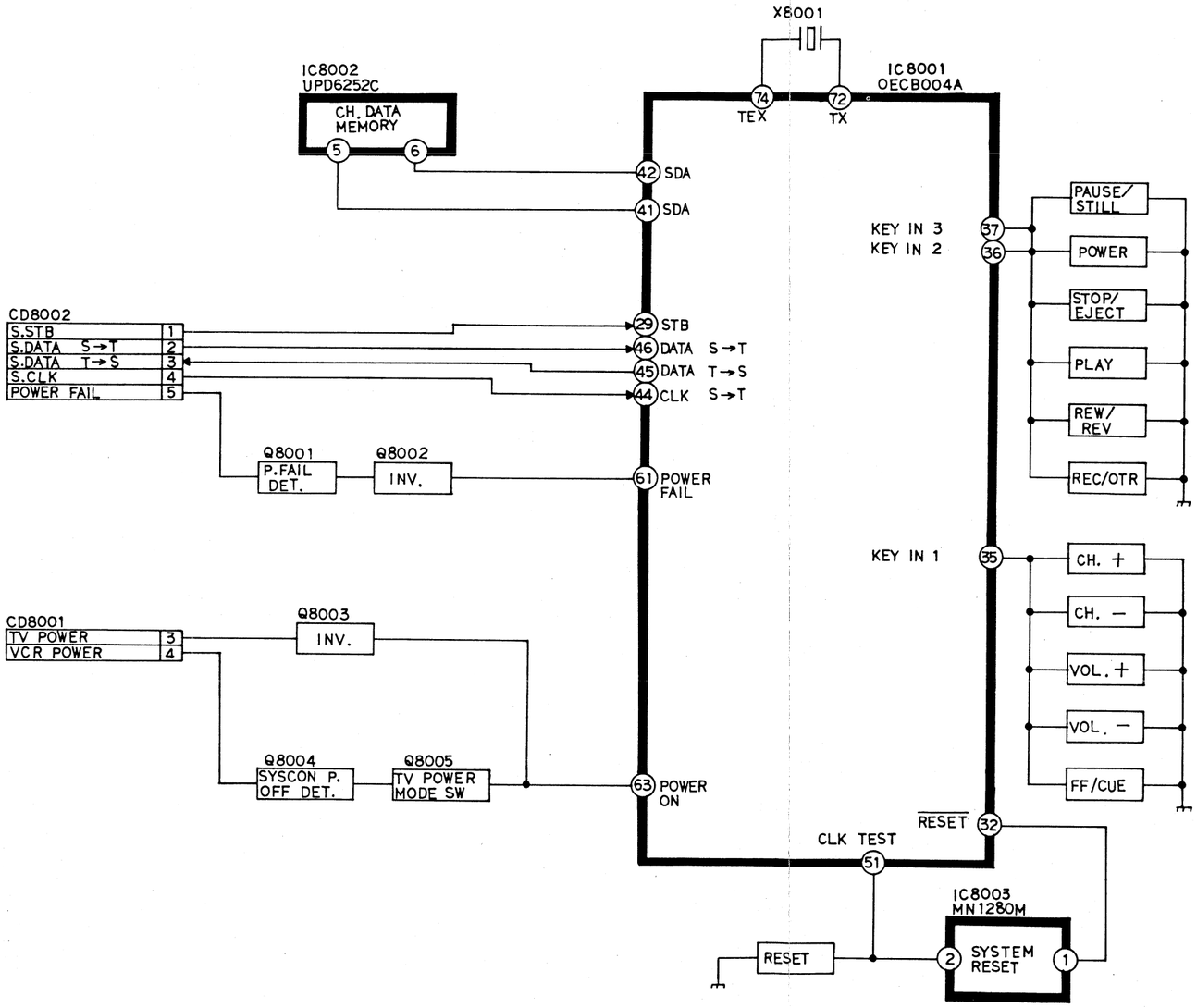


VCR HEAD AMP/AUDIO BLOCK DIAGRAM



2-3745

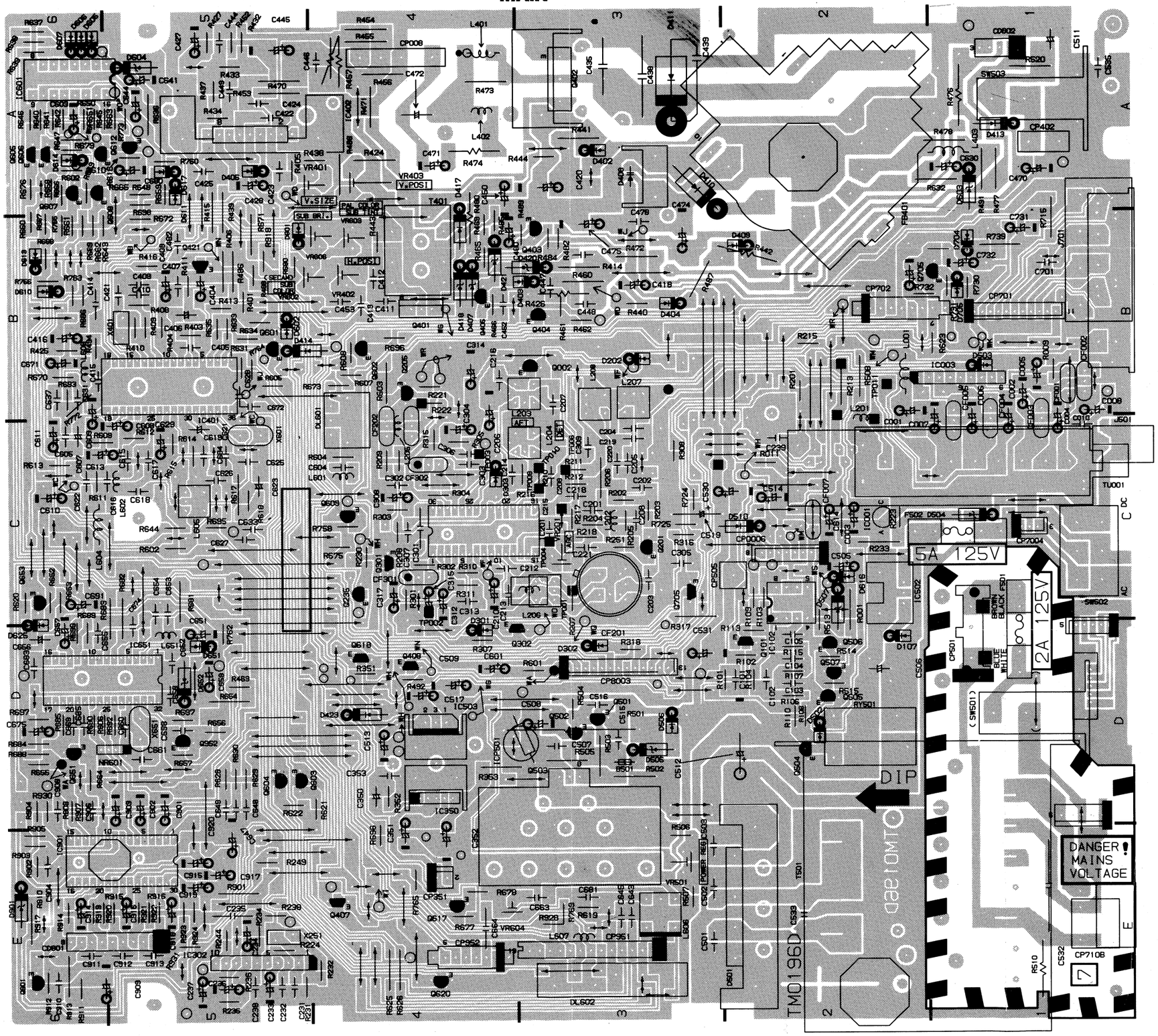
VCR CONTROL BLOCK DIAGRAM



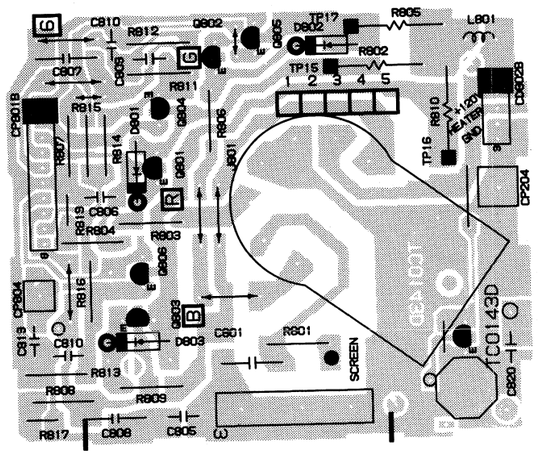
VCR CONTROL BLOCK DIAGRAM

2-3739

TV PRINTED CIRCUIT BOARD
MAIN

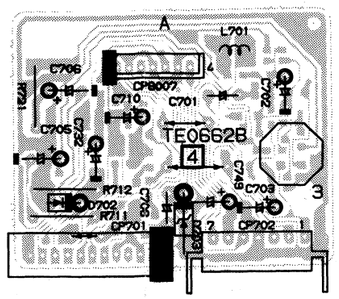


CRT

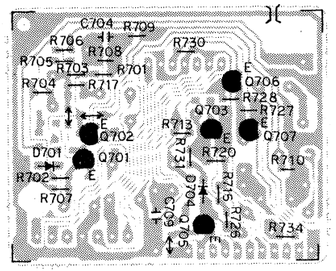


AV

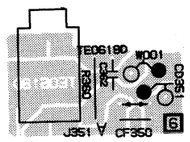
COMPONENT SIDE



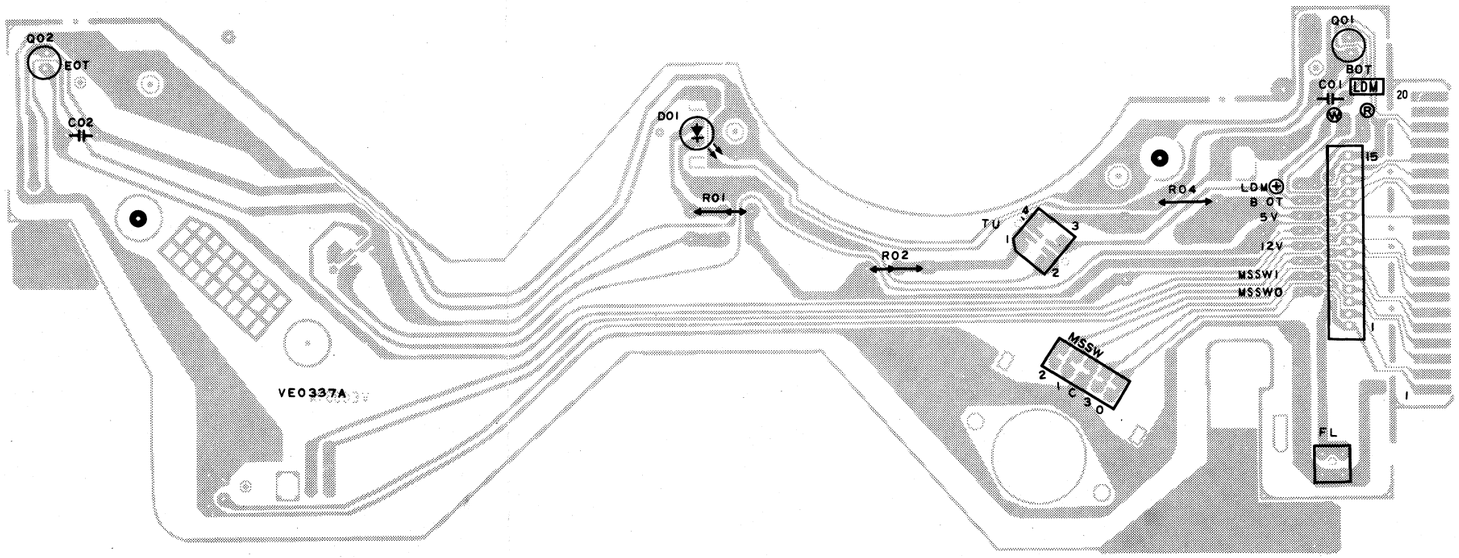
SOLDER SIDE



EARPHONE



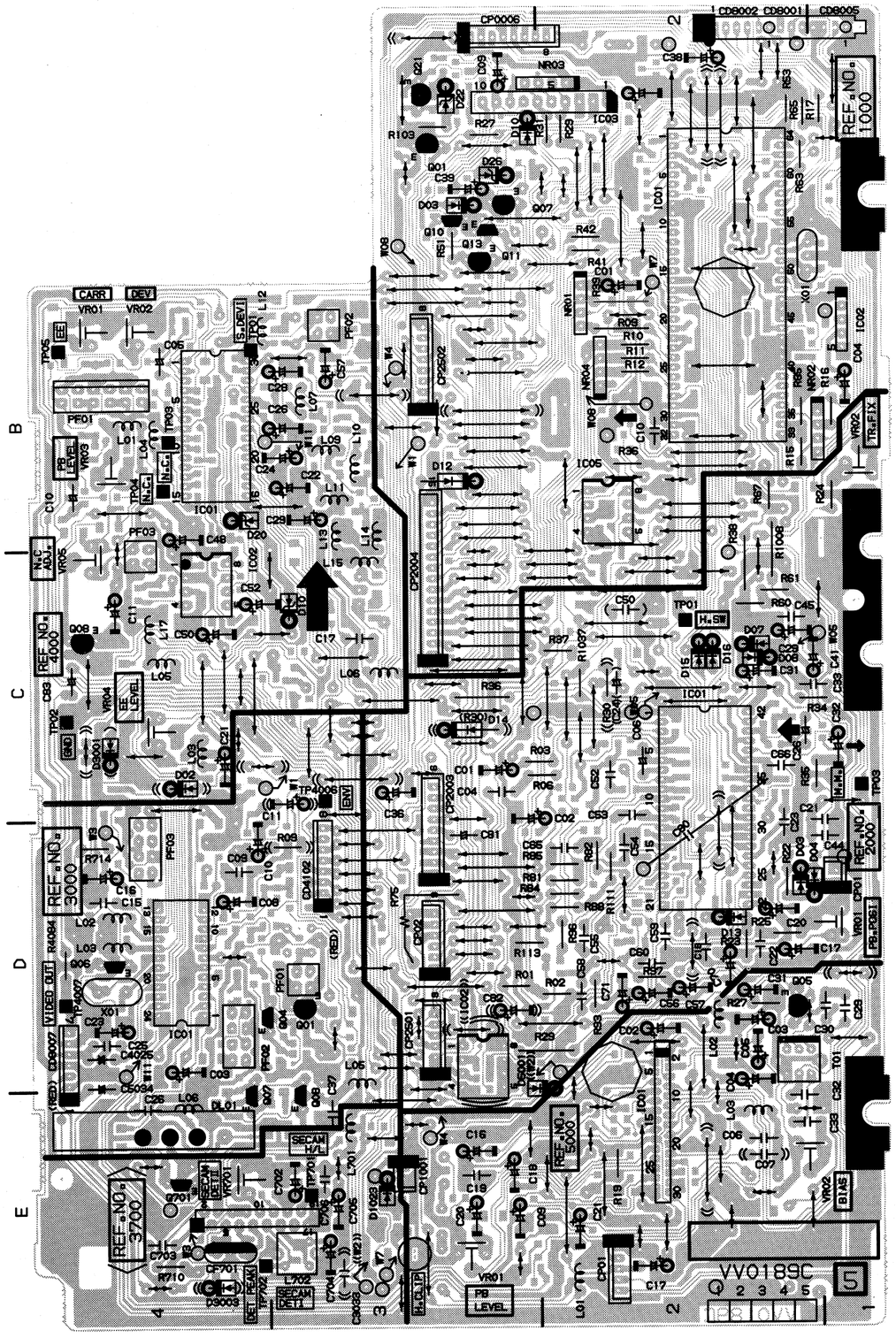
DECK



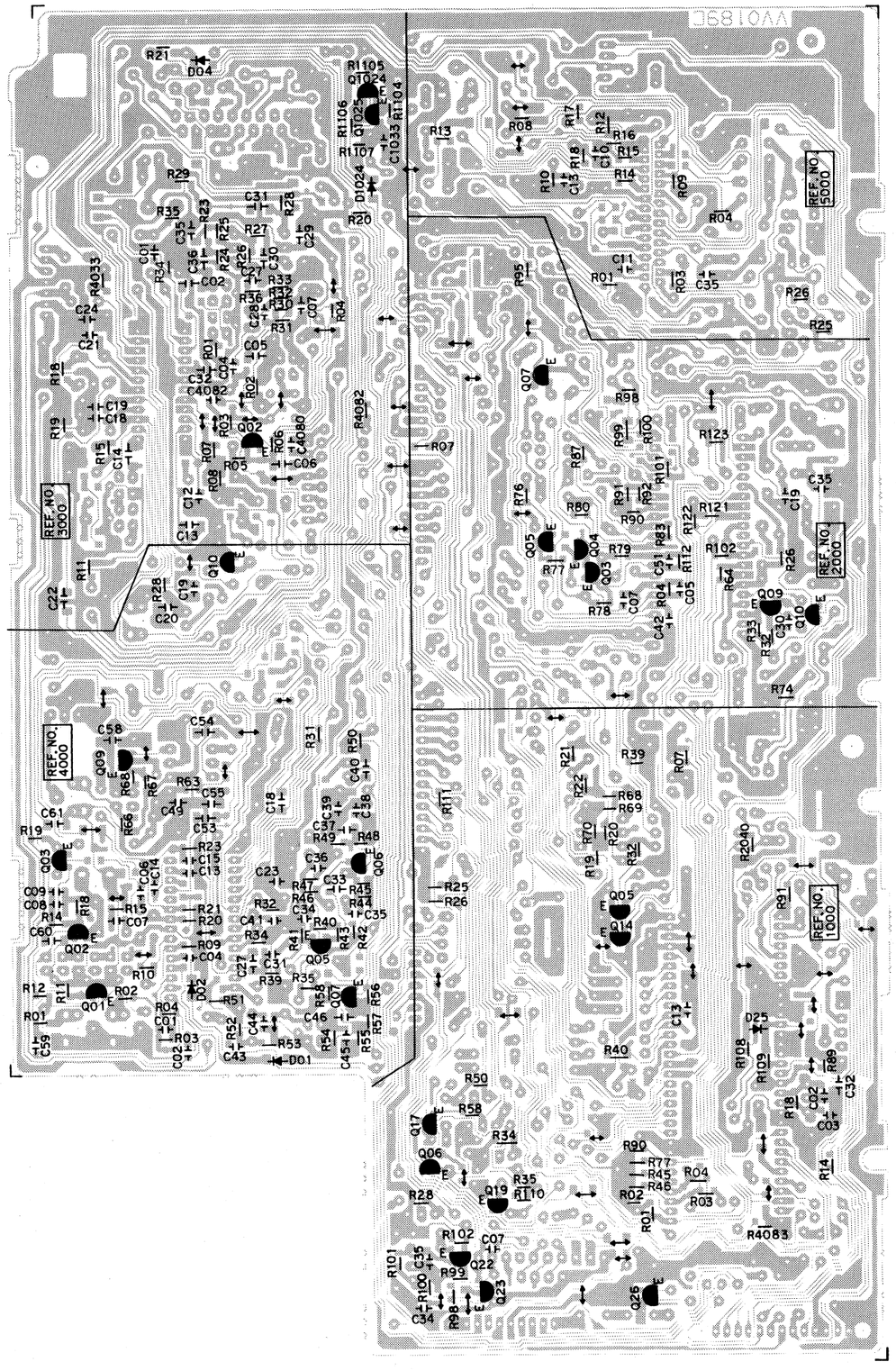
VCR PRINTED CIRCUIT BOARD

MAIN

COMPONENT SIDE

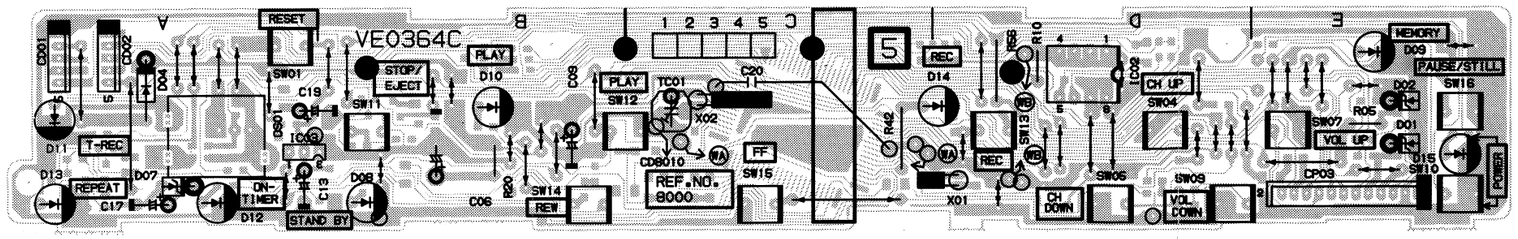


SOLDER SIDE

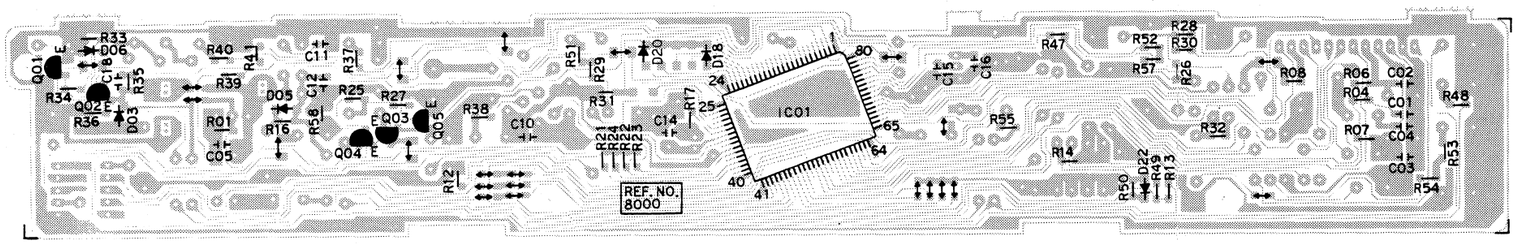


CONTROL 1

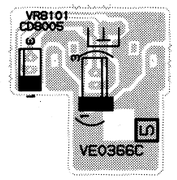
COMPONENT SIDE



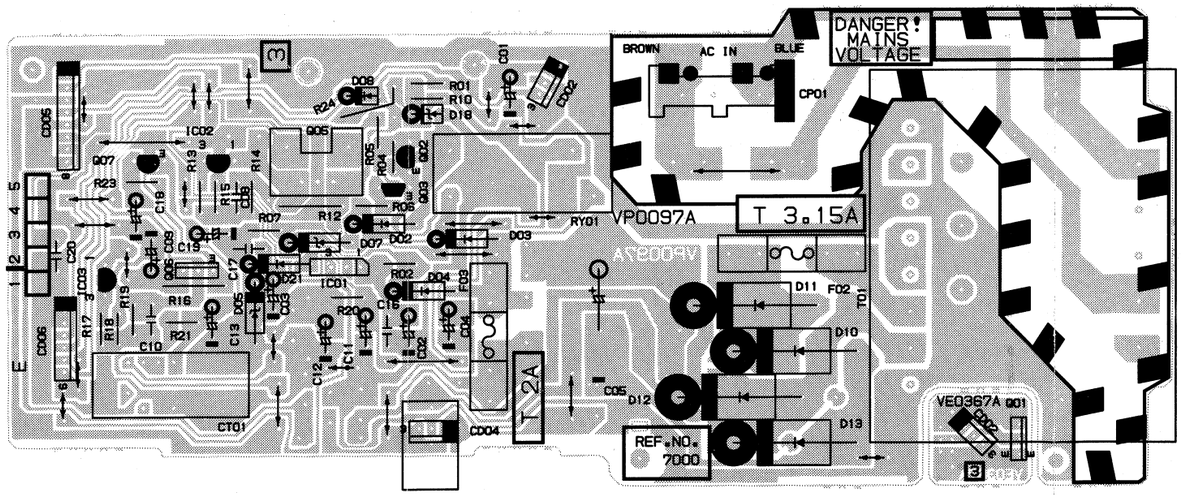
SOLDER SIDE



CONTROL 2

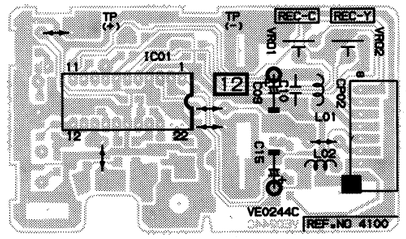


POWER SUPPLY/TRANSISTOR

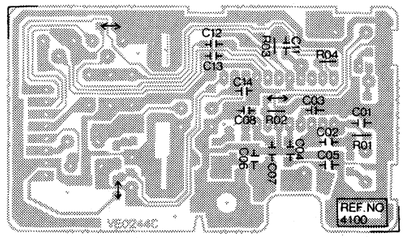


HEAD AMP

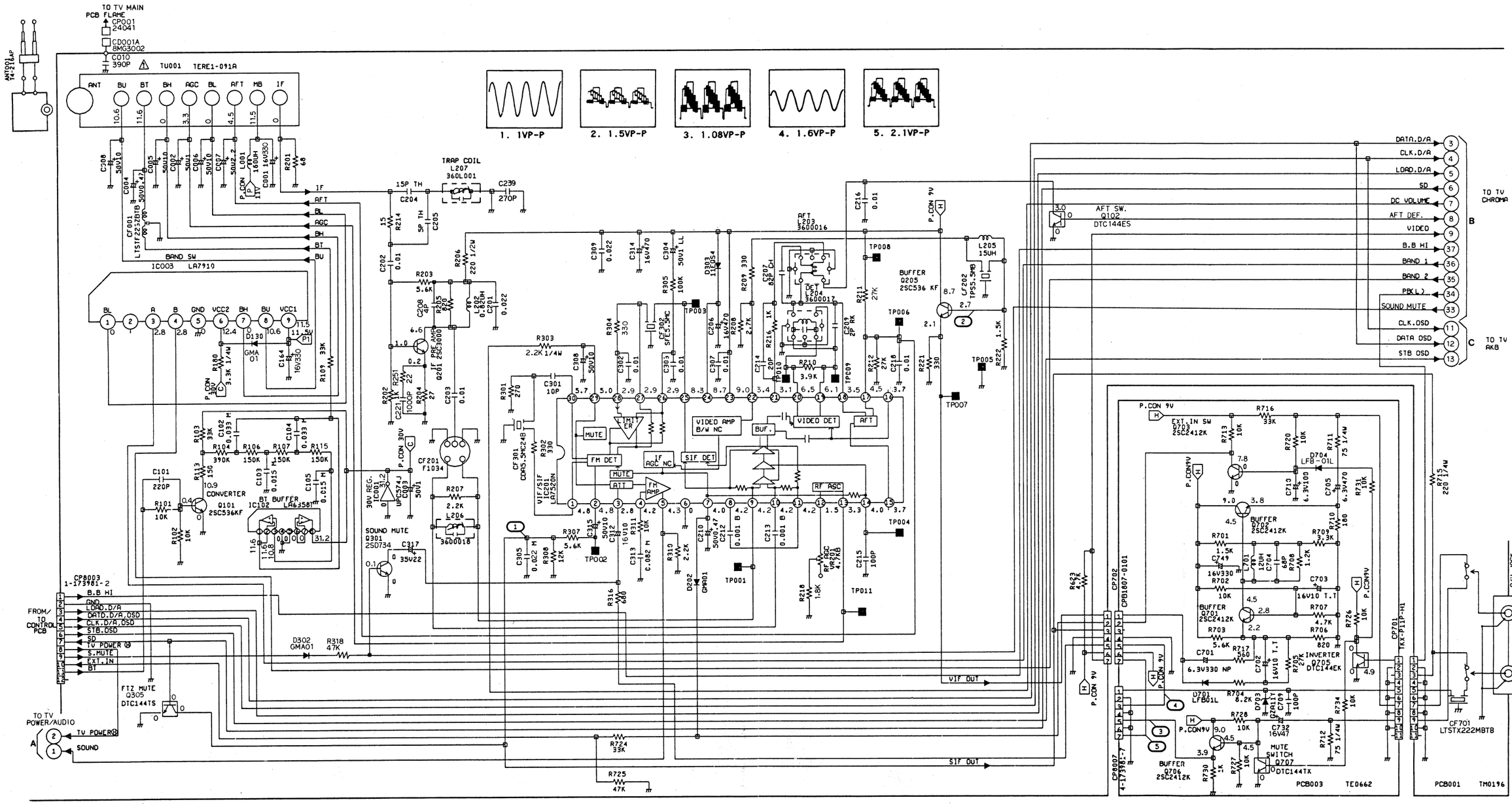
COMPONENT SIDE



SOLDER SIDE



TV IF SCHEMATIC DIAGRAM



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

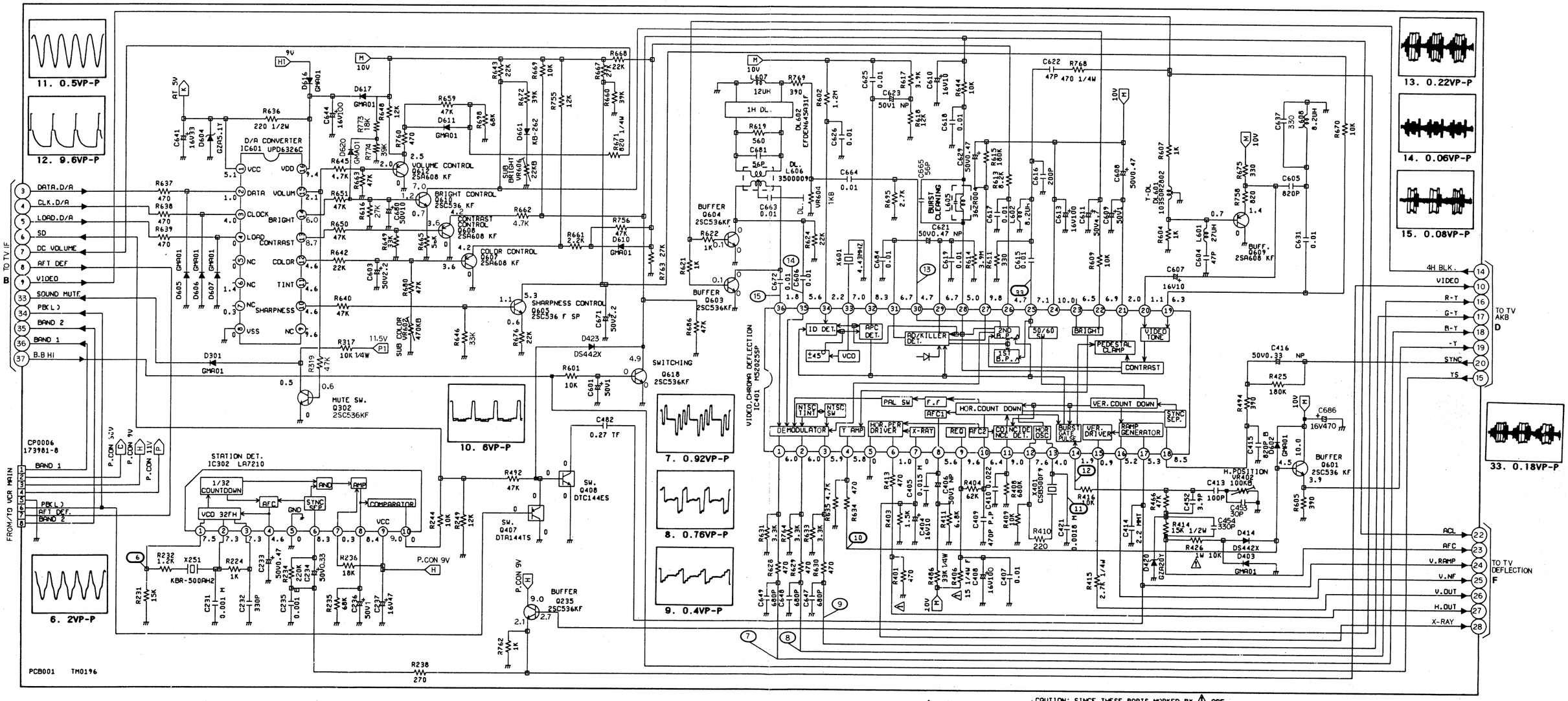
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

TV IF SCHEMATIC DIAGRAM

1-11521

TV CHROMA SCHEMATIC DIAGRAM



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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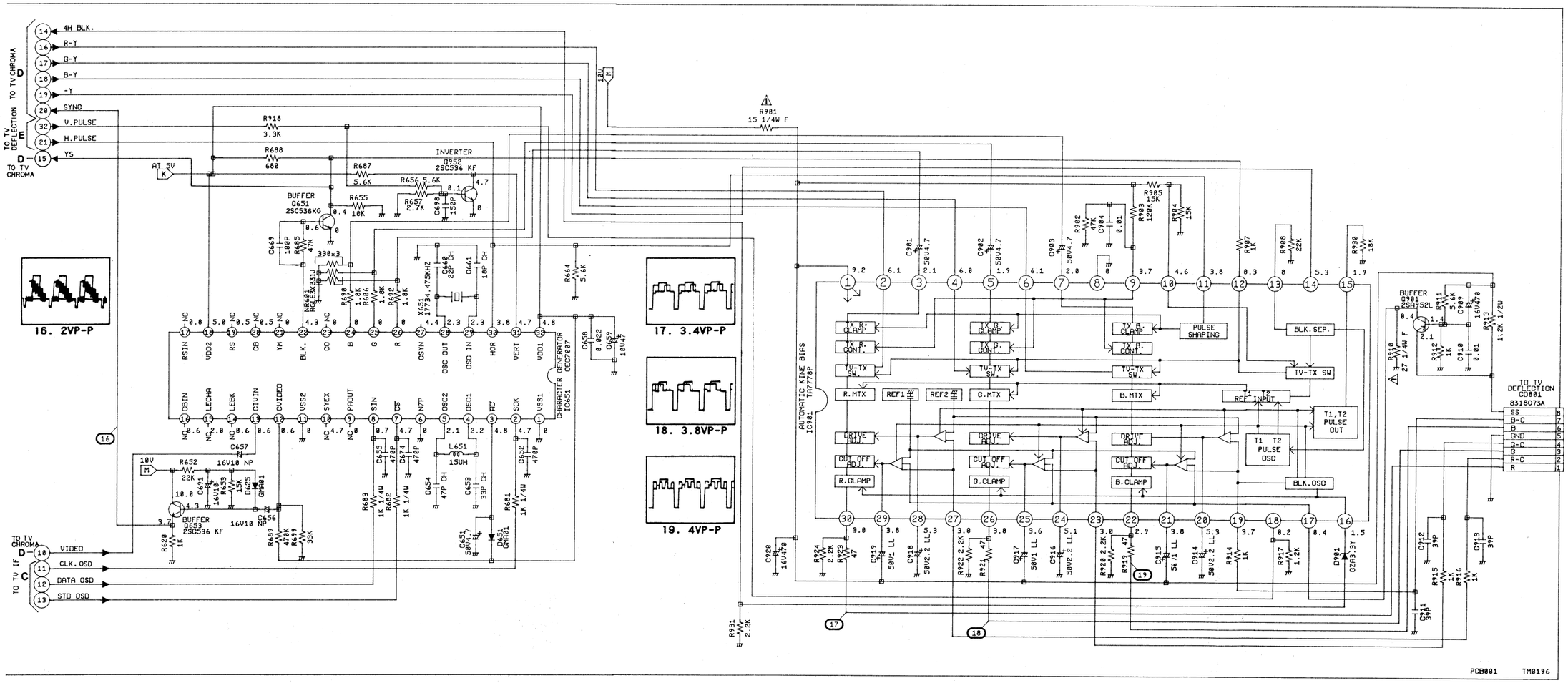
TV CHROMA SCHEMATIC DIAGRAM

1-11522

TV AKB SCHEMATIC DIAGRAM



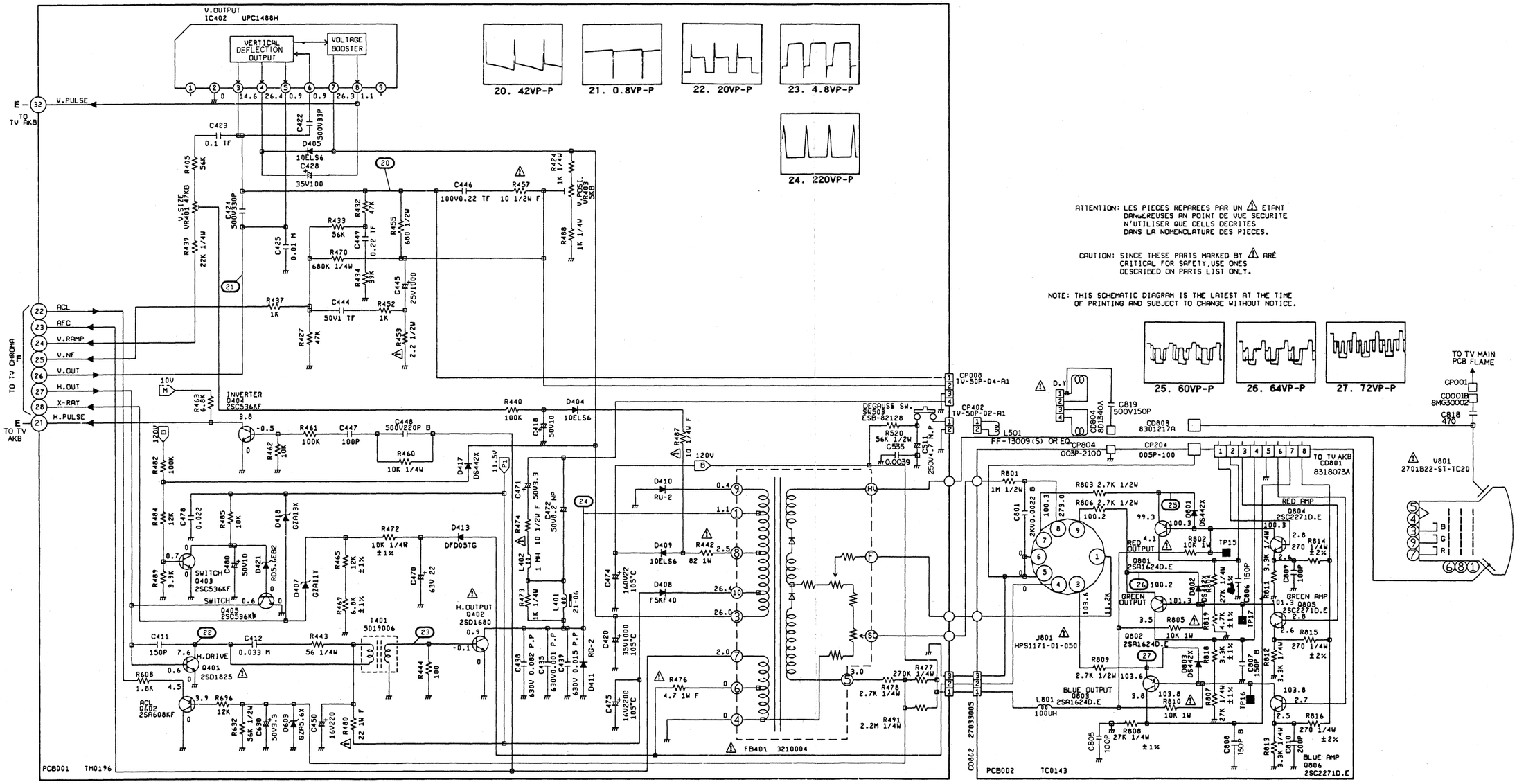
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

TV AKB SCHEMATIC DIAGRAM
1-11523

TV DEFLECTION SCHEMATIC DIAGRAM



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

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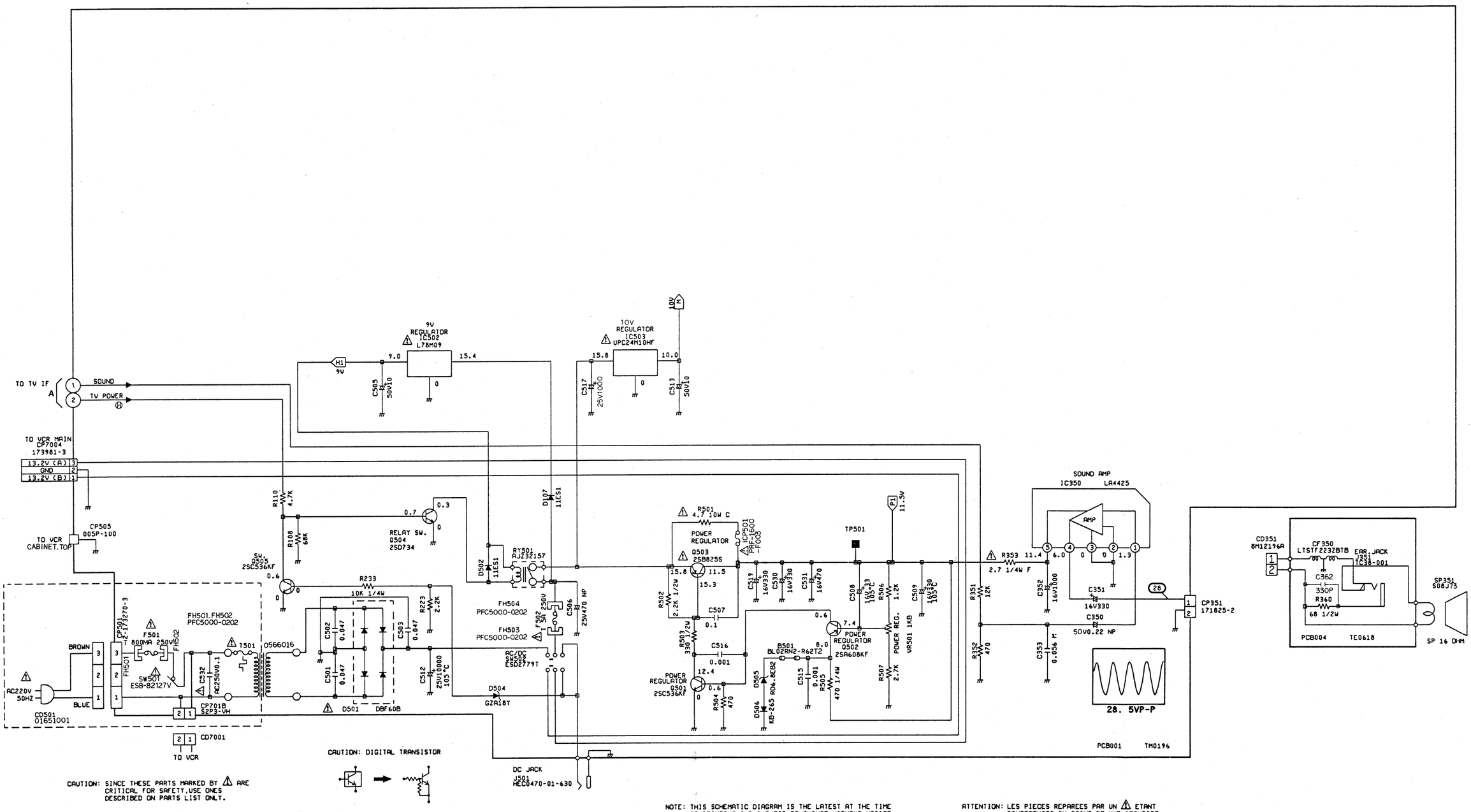
TV DEFLECTION SCHEMATIC DIAGRAM

1-11524

TV POWER/AUDIO SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

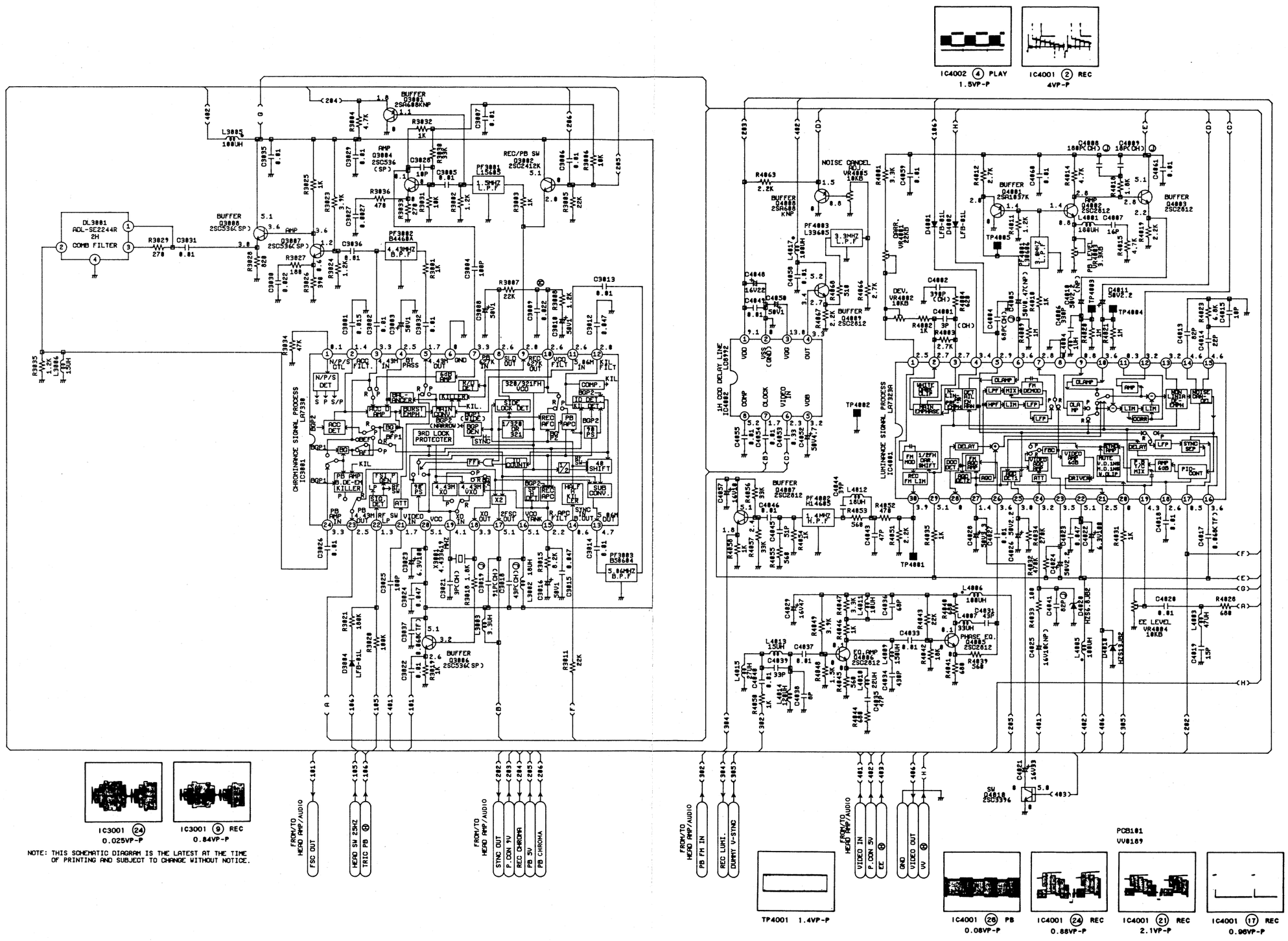
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

TV POWER/AUDIO SCHEMATIC DIAGRAM

1-11525

VCR Y.C. SCHEMATIC DIAGRAM

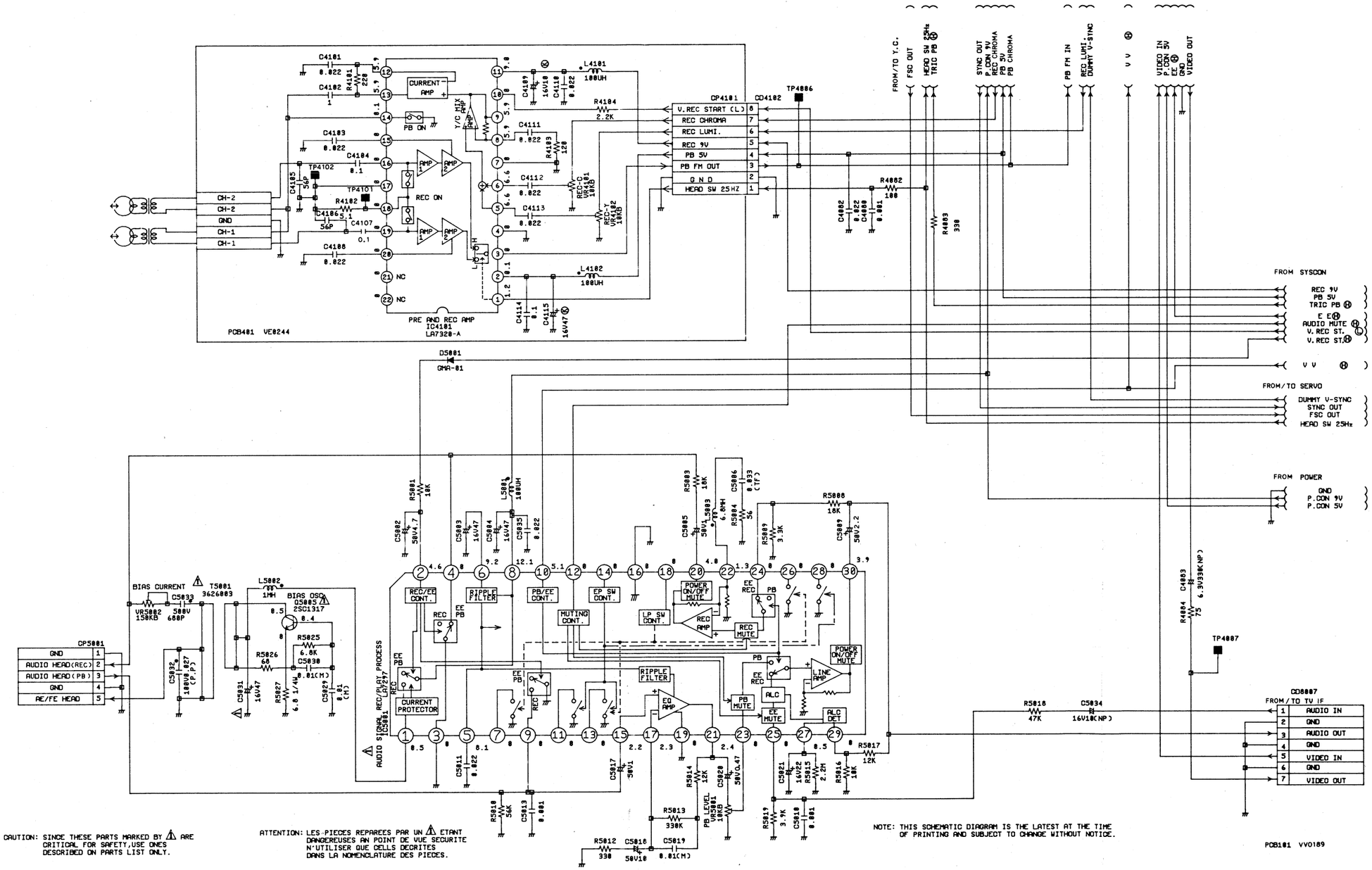


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR Y.C. SCHEMATIC DIAGRAM

1-9837

VCR HEAD AMP/AUDIO SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

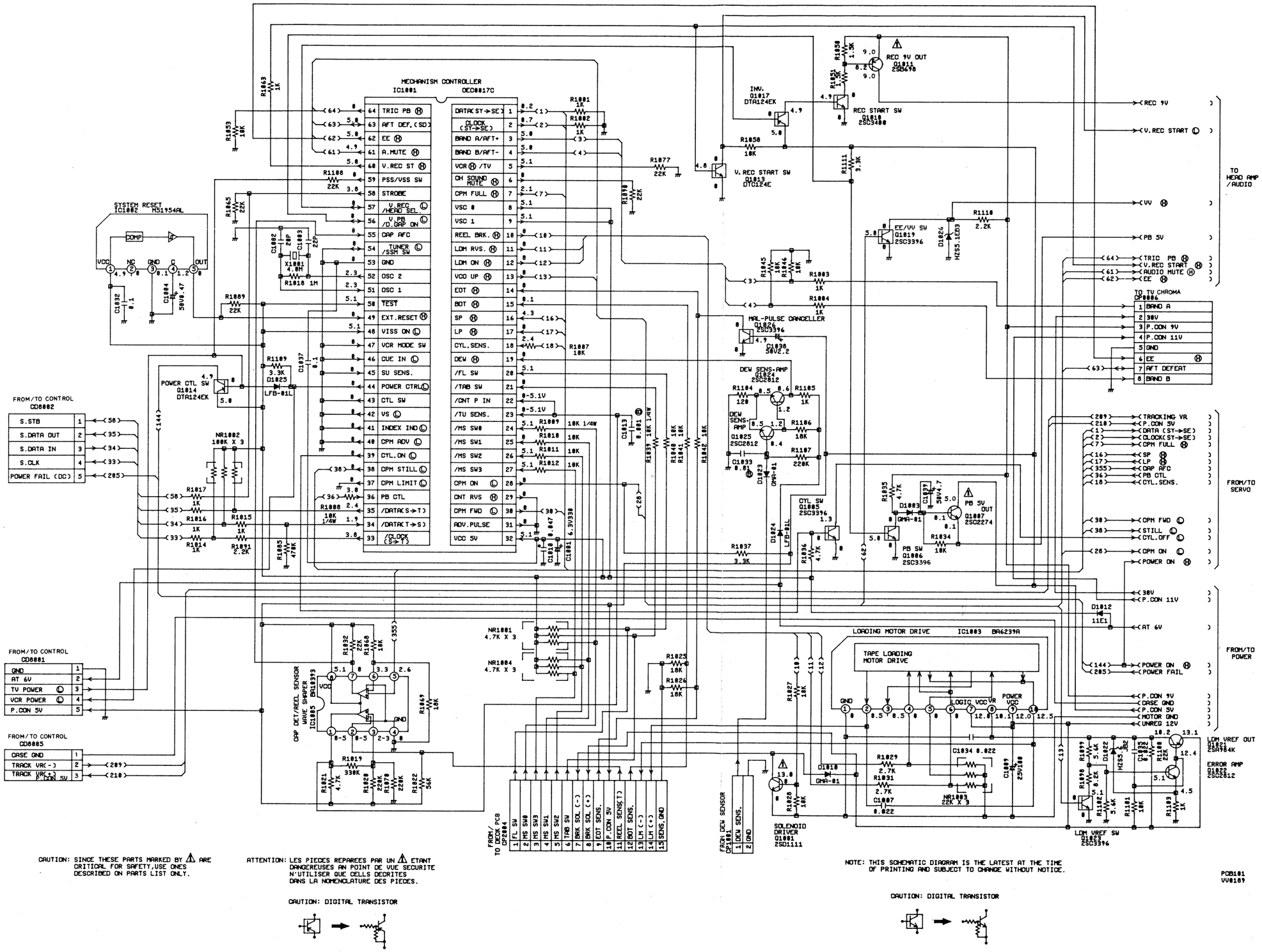
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCB101 VV0189

VCR HEAD AMP/AUDIO SCHEMATIC DIAGRAM

1-9842

VCR SYSTEM CONTROL SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITIICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

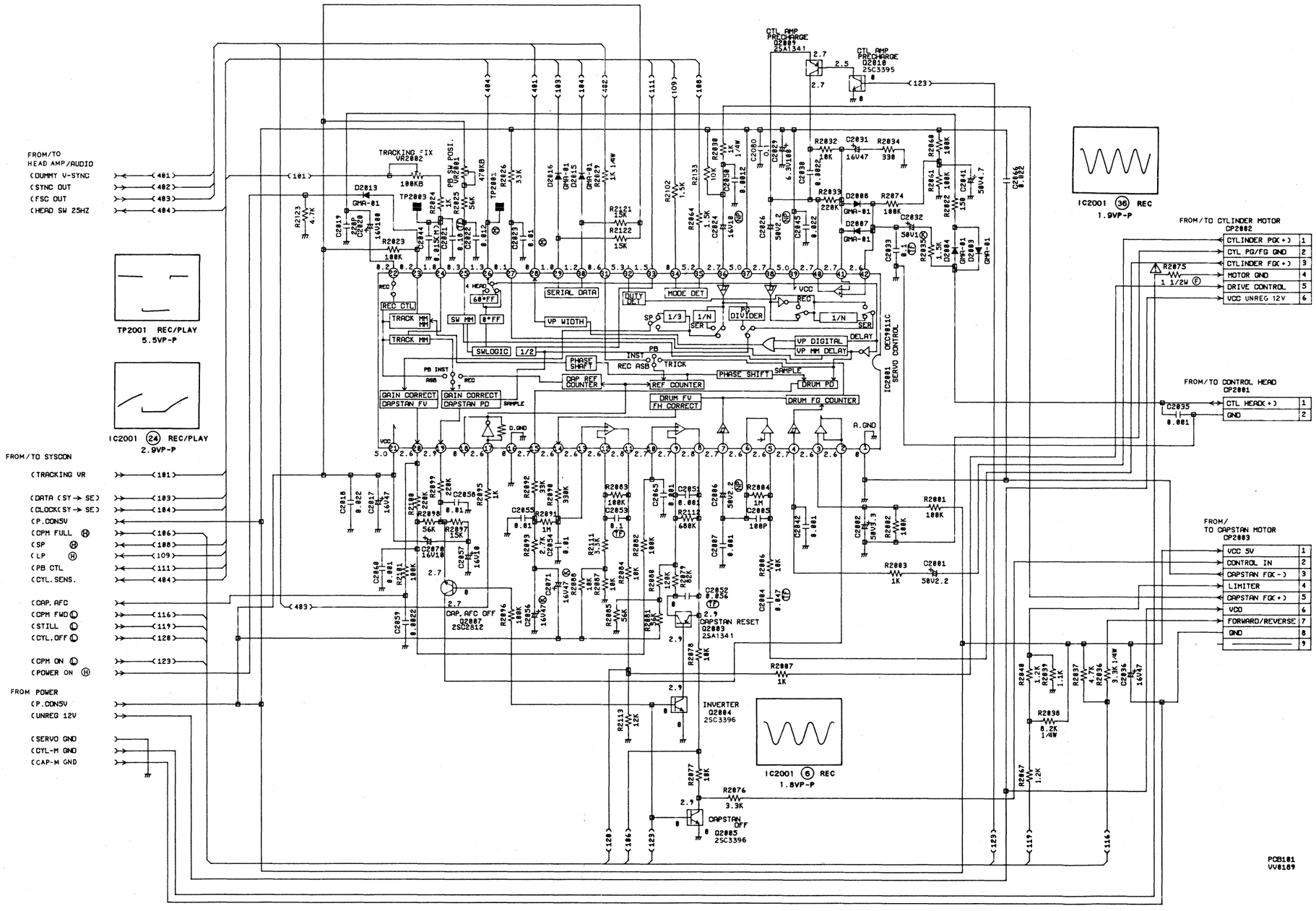
PCB101
VV0169

CAUTION: DIGITAL TRANSISTOR

VCR SYSTEM CONTROL SCHEMATIC DIAGRAM

1-9838

VCR SERVO SCHEMATIC DIAGRAM

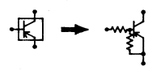


CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

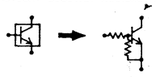
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AU POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



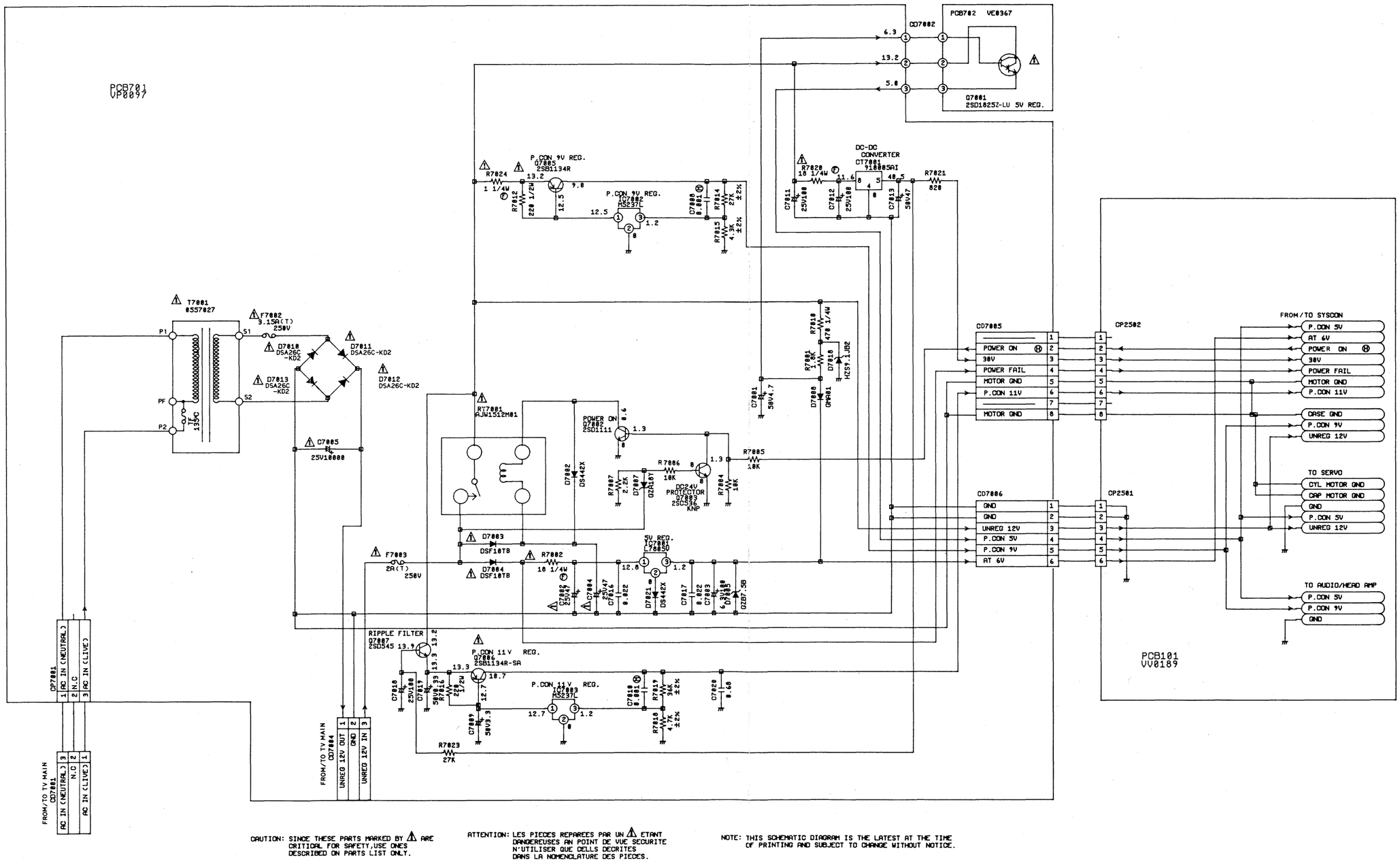
CAUTION: DIGITAL TRANSISTOR



VCR SERVO SCHEMATIC DIAGRAM

1-11532

VCR POWER SUPPLY SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

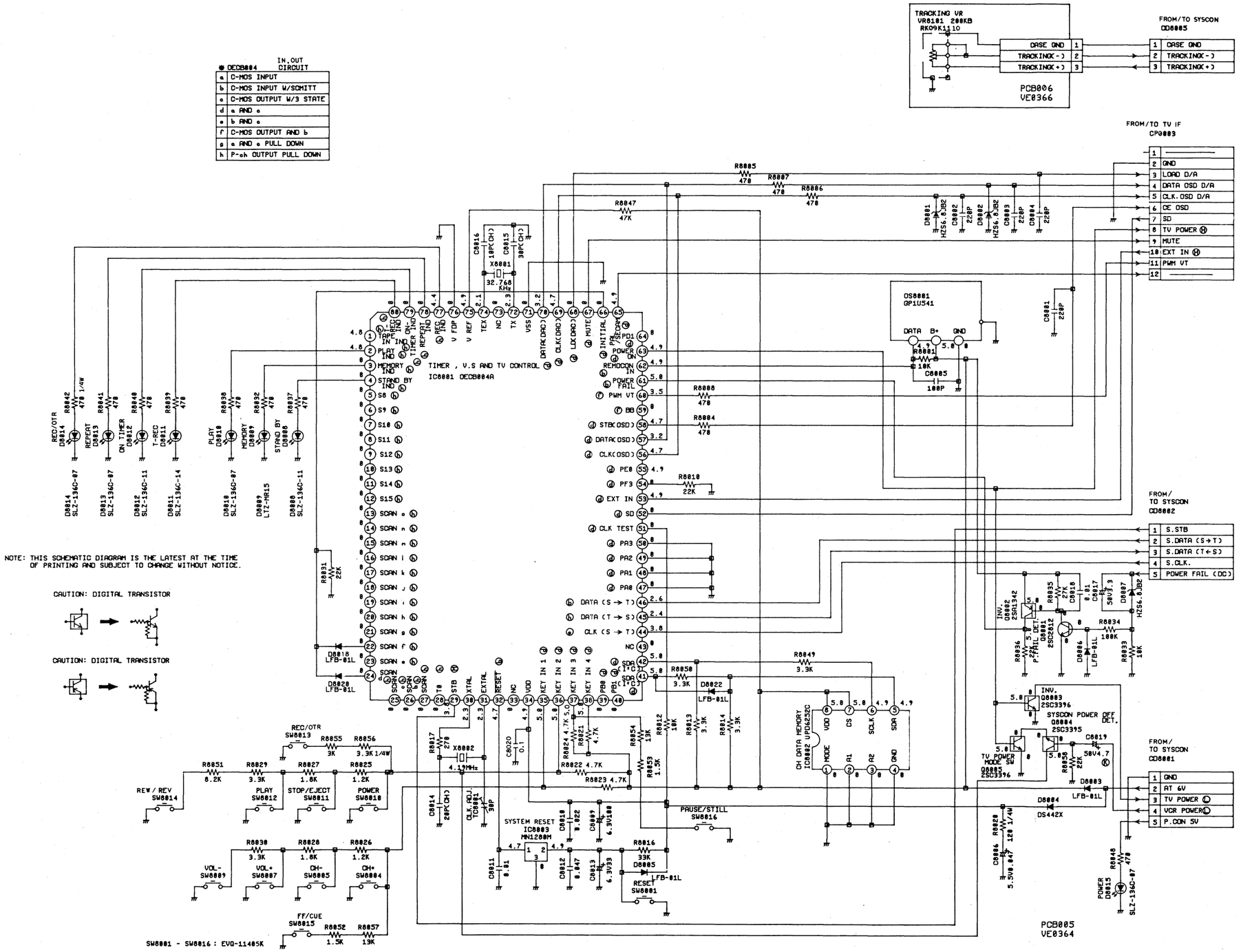
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

VCR POWER SUPPLY SCHEMATIC DIAGRAM

1-11533

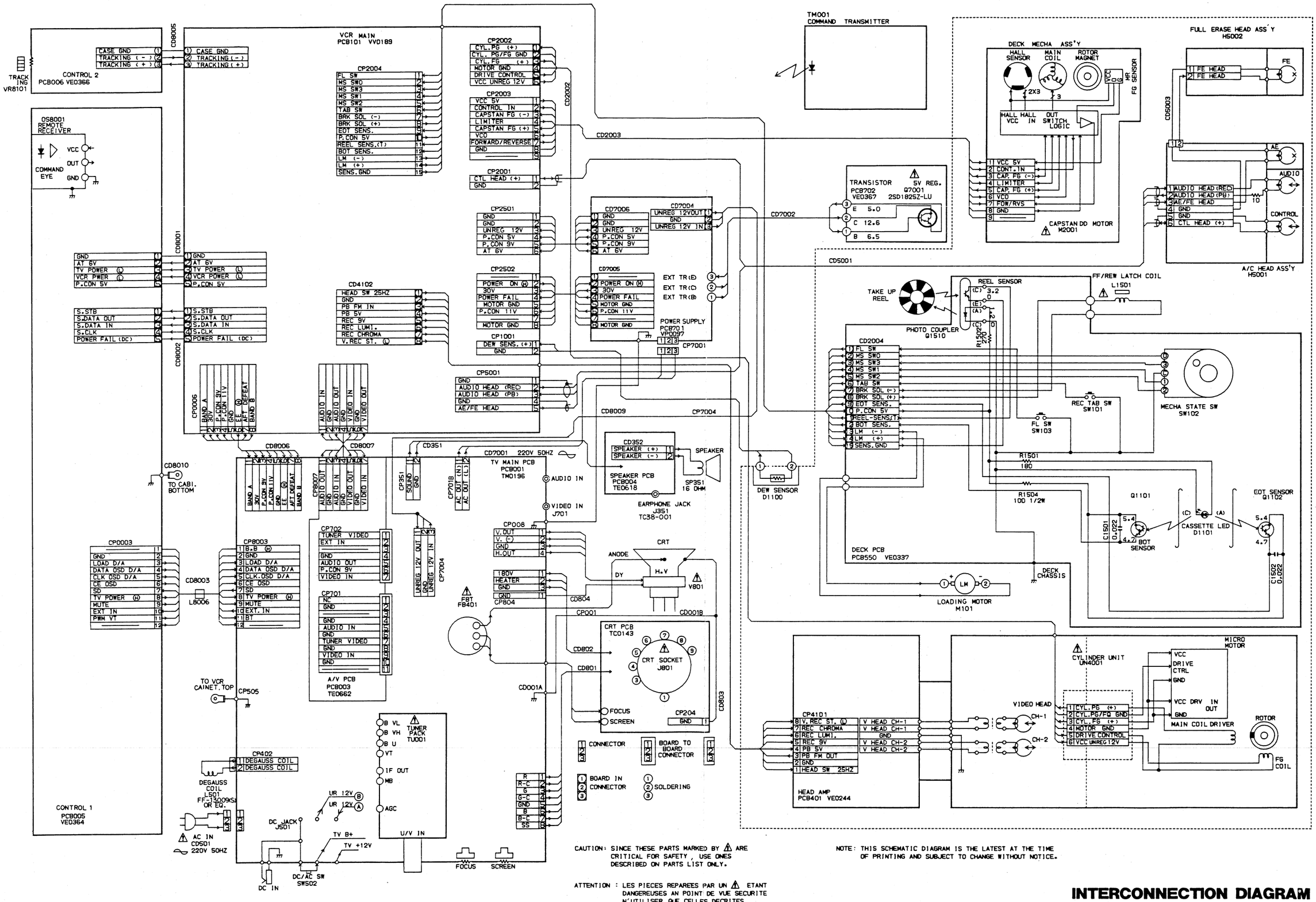
VCR CONTROL SCHEMATIC DIAGRAM



VCR CONTROL SCHEMATIC DIAGRAM

1-11534

INTERCONNECTION DIAGRAM



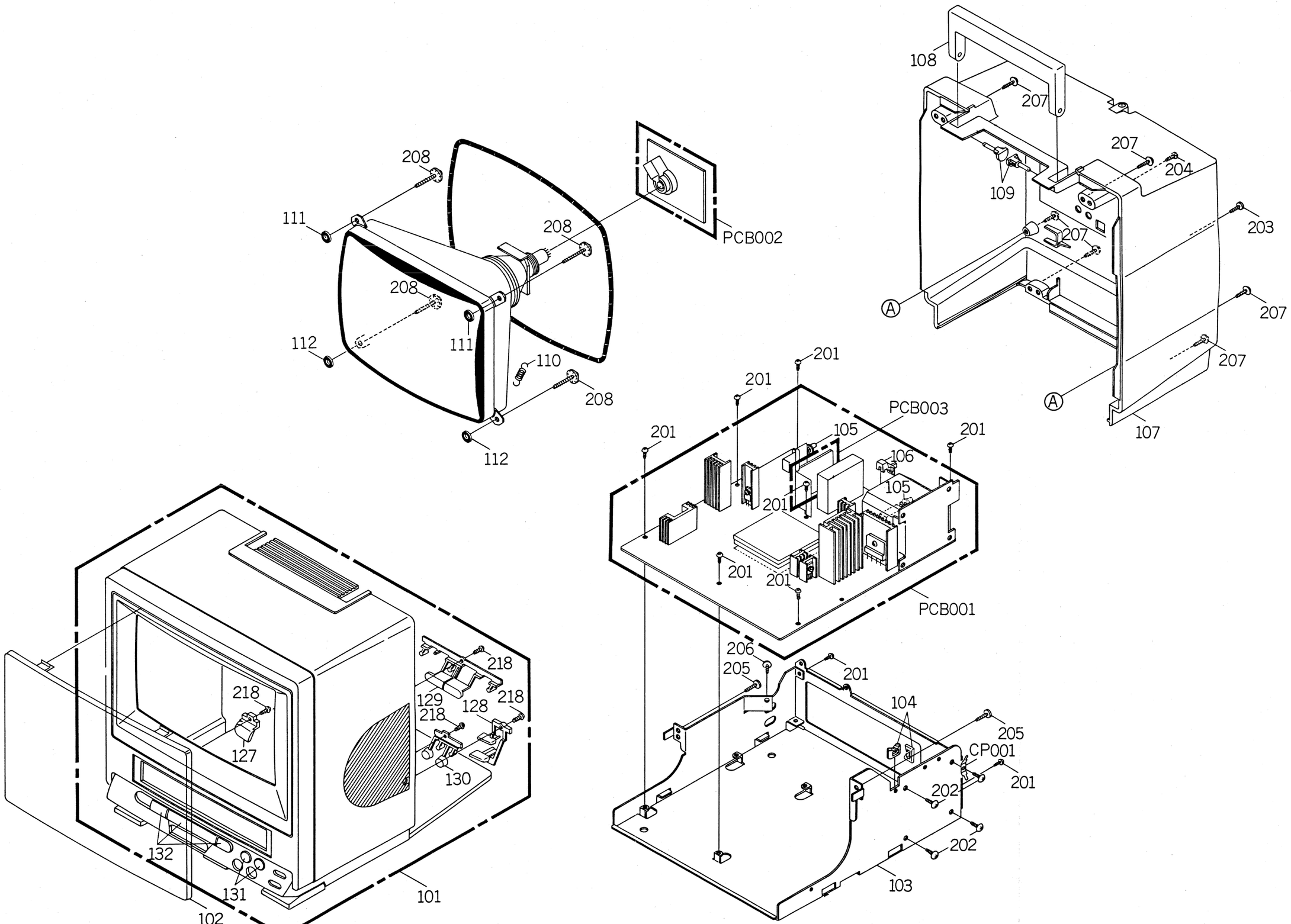
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

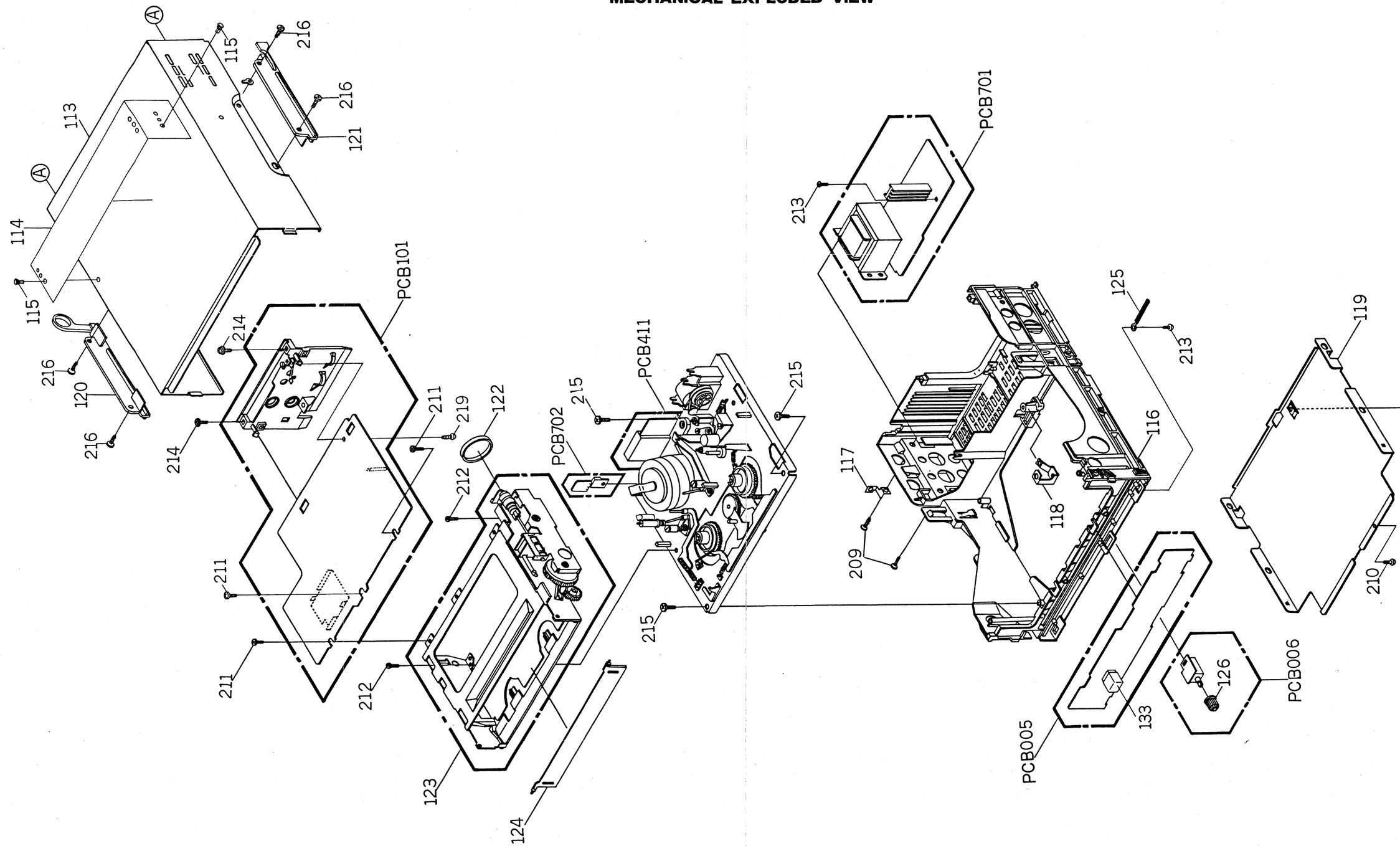
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLES DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

INTERCONNECTION DIAGRAM

MECHANICAL EXPLODED VIEW




A
113
114
115
216
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121
PCB101
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211
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122
212
123
124
PCB702
215
PCB411
PCB701
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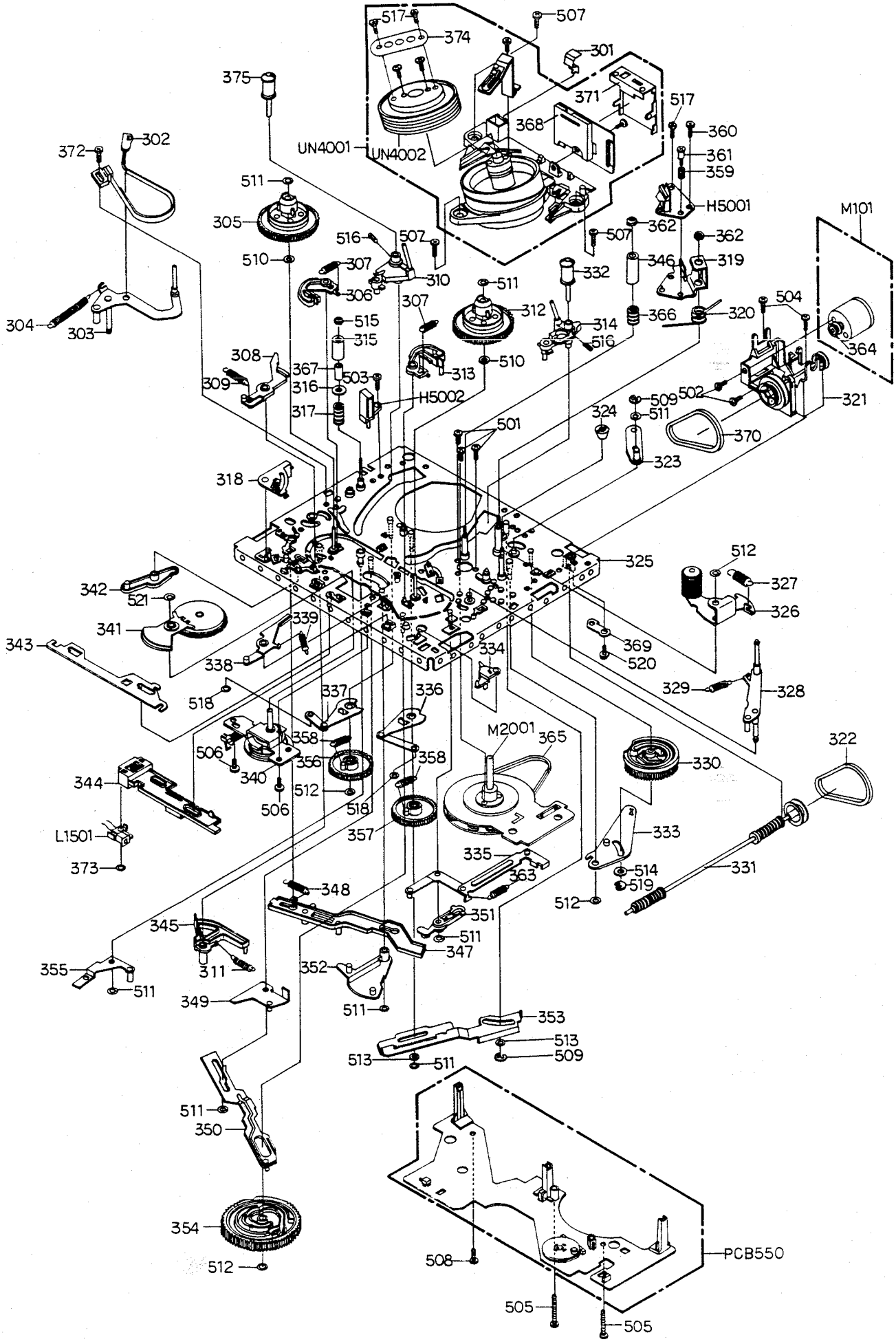
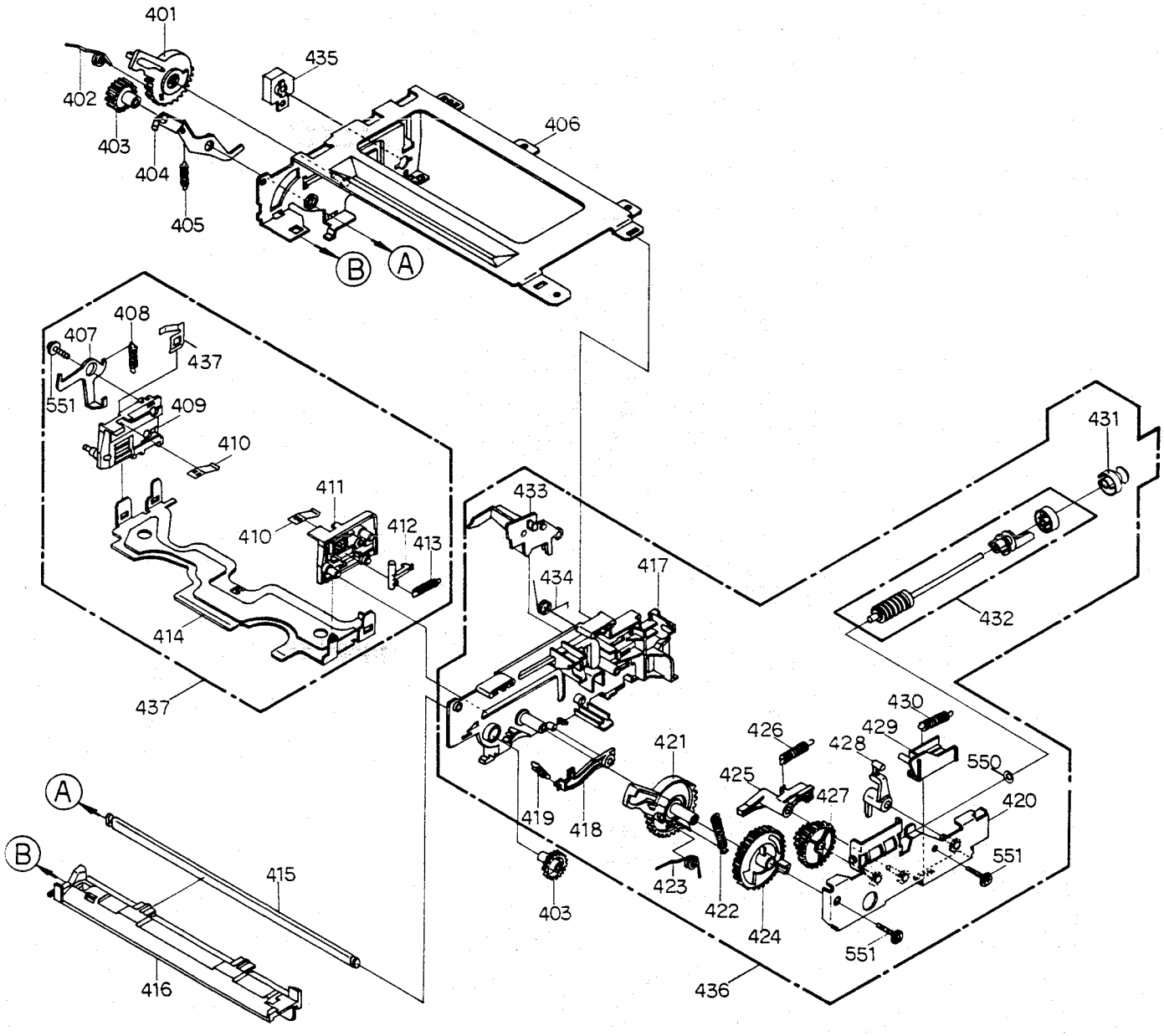
209
125
116
118
119
210
126
133
PCB005
PCB006

DECK EXPLODED VIEW



DECK EXPLODED VIEW



THIS ELECTRICAL PARTS LIST IS STANDARD PART LIST. BUT
INTERCHANGEABLE PARTS MAY BE USED IN THE UNIT.
SEE THE INTERCHANGEABLE PARTS LIST AFTER THE STANDARD PARTS LIST.

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
RESISTORS		
R317	R00104103J	RC 10K OHM 1/4W
⚠ R353	R615842R7J	R.FUSE 2.7 OHM 1/4W
⚠ R401	R001T6471J	RC 470 OHM 1/6W
⚠ R406	R61584150J	R.FUSE 15 OHM 1/4W
⚠ R426	R31181103J	R.METAL OXIDE 10K OHM 1 W
⚠ R442	R31181820J	R.METAL OXIDE 82 OHM 1 W
⚠ R453	R002T22R2J	RC 2.2 OHM 1/2W
⚠ R457	R61582100J	R.FUSE 10 OHM 1/2W
⚠ R474	R61582100J	R.FUSE 10 OHM 1/2W
⚠ R476	R615814R7J	R.FUSE 4.7 OHM 1 W
⚠ R480	R61581220J	R.FUSE 22 OHM 1 W
⚠ R487	R61584100J	R.FUSE 10 OHM 1/4W
⚠ R501	R512CF4R7K	R.CEMENT 4.7 OHM 10 W
R601	R00106103J	RC 10K OHM 1/6W
⚠ R802	R33181103J	R.METAL OXIDE 10K OHM 1 W
⚠ R805	R33181103J	R.METAL OXIDE 10K OHM 1 W
⚠ R810	R33181103J	R.METAL OXIDE 10K OHM 1 W
⚠ R901	R61584150J	R.FUSE 15 OHM 1/4W
⚠ R910	R61584270J	R.FUSE 27 OHM 1/4W
⚠ R2075	R63582010J	R.FUSE 1 OHM 1/2W
⚠ R7002	R615U4180J	R.FUSE 18 OHM 1/4W
⚠ R7020	R615U4180J	R.FUSE 18 OHM 1/4W
⚠ R7024	R63584010J	R.FUSE 1 OHM 1/4W
CAPACITORS		
C206	E027F2471M	CE 470 UF 16V
C312	E02EF2100M	CE 10 UF 16V
C353	P12400563J	CP 0.056 UF 50V
C409	P31100471J	CPP 470 PF 50V
C414	P23200225J	CMPL 2.2 UF 50V
C420	E53Z04102M	CE 1000 UF 35V VZ
C435	P341F5102J	CPP 0.001 UF 630V
C436	P341F5823J	CPP 0.082 UF 630V
C439	P341F5153J	CPP 0.015 UF 630V
C445	E027F3102M	CE 1000 UF 25V
C472	E039F58R2K	CE 8.2 UF 50V NP
C474	E01HFB220M	C.ALMI ELECT. 22 UF 160V
C475	E53Z02222M	CE 2200 UF 16V VZ
C506	E01E03471M	CE 470 UF 25V
C509	E02HF2331M	CE 330 UF 16V
C511	P21503475K	CMP 4.7 UF 250V
C512	E01SF3103M	CE 10000 UF 25V
C517	E02703102M	CE 1000 UF 25V
C519	E02702331M	CE 330 UF 16V
⚠ C532	P614FB104M	CMPL 0.1 UFAC250V
C535	C020B04N3K	CC 0.0039UF 50V B
C686	E02702471M	CE 470 UF 16V
C749	E027F2331M	CE 330 UF 16V
C801	C02BB07H3K	CC 0.0022UF 2KV B
C818	CH40B04Q2K	CC 470 PF 50V
C1037	CH40F0415Z	CC 0.1 UF 50V
C2080	CH40F0415Z	CC 0.1 UF 50V
⚠ C5031	E011T2470M	CE 47 UF 16V
⚠ C7002	E011T3470M	CE 47 UF 25V
⚠ C7004	E011T3470M	CE 47 UF 25V
⚠ C7005	E01SF3103M	CE 10000 UF 25V
C8006	E55A0P473Z	CE 0.047 UF 5.5V
C8020	CH40F0415Z	CC 0.1 UF 50V
SEMICONDUCTORS		
D107	D28T011ES1	DIODE,SILICON 11ES1TA1
D130	D13TGMA010	DIODE,SILICON GMA-01-BT
D202	D13TGMA010	DIODE,SILICON GMA-01-BT
D301	D13TGMA010	DIODE,SILICON GMA-01-BT
D302	D13TGMA010	DIODE,SILICON GMA-01-BT
D303	D28TEQS040	DIODE,SCHOTTKY 11EQS04TA1
D403	D13TGMA010	DIODE,SILICON GMA-01-BT
D404	D28T10ELS6	DIODE,RECTIFIER 10ELS6TA1
D405	D28T10ELS6	DIODE,RECTIFIER 10ELS6TA1
D407	D93T01100Y	DIODE,ZENER GZA11 Y BT
D408	D28A5KF400	DIODE,SILICON F5KF40
D409	D28T10ELS6	DIODE,RECTIFIER 10ELS6TA1
D410	D28F00RU20	DIODE,SILICON RU-2
D411	D2B000RG20	DIODE,SILICON RG2
D413	D23TFD05TG	DIODE,RECTIFIER DFD05TG-BT
D414	D13TDS442X	DIODE,SILICON DS442X-BT
D417	D13TDS442X	DIODE,SILICON DS442X-BT
D418	D93T01300X	DIODE,ZENER GZA13 X BT
D420	D93T02000Y	DIODE,ZENER GZA20 Y BT
D421	D92T05R6B2	DIODE,ZENER RD5.6EB 2 TA11R
D423	D13TDS442X	DIODE,SILICON DS442X-BT
⚠ D501	D23ZDBF600	DIODE,RECTIFIER DBF60
D502	D28T011ES1	DIODE,SILICON 11ES1TA1
D504	D93T01800Y	DIODE,ZENER GZA18 Y BT

REF.NO	PART NO	DESCRIPTION
SEMICONDUCTORS (CONT)		
D505	D92T06R8B2	DIODE,ZENER RD6.8EB 2 TA11R
D506	D6J0KB2650	DIODE,VARISTA KB-265
D601	D6J0KB2620	DIODE,VARISTA KB-262
D602	D13TGMA010	DIODE,SILICON GMA-01-BT
D603	D93T05R60X	DIODE,ZENER GZA5.6 X BT
D604	D93T05R10Y	DIODE,ZENER GZA5.1 Y BT-T
D605	D13TGMA010	DIODE,SILICON GMA-01-BT
D606	D13TGMA010	DIODE,SILICON GMA-01-BT
D607	D13TGMA010	DIODE,SILICON GMA-01-BT
D610	D13TGMA010	DIODE,SILICON GMA-01-BT
D611	D13TGMA010	DIODE,SILICON GMA-01-BT
D616	D13TGMA010	DIODE,SILICON GMA-01-BT
D617	D13TGMA010	DIODE,SILICON GMA-01-BT
D620	D130GMA010	DIODE,SILICON GMA-01
D625	D13TGMA010	DIODE,SILICON GMA-01-BT
D651	D13TGMA010	DIODE,SILICON GMA-01-BT
D701	DD3RLFB01L	DIODE,SILICON LFB-01L
D703	D93T01100Y	DIODE,ZENER GZA11 Y BT
D704	DD3RLFB01L	DIODE,SILICON LFB-01L
D801	D13TDS442X	DIODE,SILICON DS442X-BT
D802	D13TDS442X	DIODE,SILICON DS442X-BT
D803	D13TDS442X	DIODE,SILICON DS442X-BT
D901	D93T03R30Y	DIODE,ZENER GZA3.3 Y BT
D1003	D13TGMA010	DIODE,SILICON GMA-01-BT
D1010	D13TGMA010	DIODE,SILICON GMA-01-BT
D1012	D28T011E10	DIODE,SILICON 11E1TA1
D1022	D94TA5R6J2	DIODE,ZENER HZS5R6JB2-TE
D1023	D13TGMA010	DIODE,SILICON GMA-01-BT
D1024	DD3RLFB01L	DIODE,SILICON LFB-01L
D1025	DD3RLFB01L	DIODE,SILICON LFB-01L
D1026	D94TA5R1B3	DIODE,ZENER HZS5R1EB3-T
D2003	D13TGMA010	DIODE,SILICON GMA-01-BT
D2004	D13TGMA010	DIODE,SILICON GMA-01-BT
D2007	D13TGMA010	DIODE,SILICON GMA-01-BT
D2008	D13TGMA010	DIODE,SILICON GMA-01-BT
D2013	D13TGMA010	DIODE,SILICON GMA-01-BT
D2015	D13TGMA010	DIODE,SILICON GMA-01-BT
D2016	D13TGMA010	DIODE,SILICON GMA-01-BT
D3004	DD3RLFB01L	DIODE,SILICON LFB-01L
D4001	DD3RLFB01L	DIODE,SILICON LFB-01L
D4002	DD3RLFB01L	DIODE,SILICON LFB-01L
D4010	D94TA130J2	DIODE,ZENER HZS13JB2-TE
D4020	D94TA6R8J2	DIODE,ZENER HZS6R8JB2-TE
D5001	D13TGMA010	DIODE,SILICON GMA-01-BT
D7002	D13TDS442X	DIODE,SILICON DS442X-BT
⚠ D7003	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
⚠ D7004	D23TDSF10T	DIODE,RECTIFIER DSF10TB-BT-A
D7005	D93017R51B	DIODE,ZENER GZB7.5B
D7007	D93T01800Y	DIODE,ZENER GZA18 Y BT
D7008	D13TGMA010	DIODE,SILICON GMA-01-BT
D7010	D23J0A26C0	DIODE,RECTIFIER DSA26C-KD2
⚠ D7011	D23J0A26C0	DIODE,RECTIFIER DSA26C-KD2
⚠ D7012	D23J0A26C0	DIODE,RECTIFIER DSA26C-KD2
⚠ D7013	D23J0A26C0	DIODE,RECTIFIER DSA26C-KD2
D7018	D94TA9R1J2	DIODE,ZENER HZS9R1JB2-TE
D7021	D13TDS442X	DIODE,SILICON DS442X-BT
D8001	D94TA6R8J2	DIODE,ZENER HZS6R8JB2-TE
D8002	D94TA6R8J2	DIODE,ZENER HZS6R8JB2-TE
D8003	DD3RLFB01L	DIODE,SILICON LFB-01L
D8004	D13TDS442X	DIODE,SILICON DS442X-BT
D8005	DD3RLFB01L	DIODE,SILICON LFB-01L
D8006	DD3RLFB01L	DIODE,SILICON LFB-01L
D8007	D94TA6R8J2	DIODE,ZENER HZS6R8JB2-TE
D8008	002132Q020	LED SLZ-136C-11-AB-T1
D8009	DB7T2MR150	GLASS SEALED LED LTZ-MR15-T77
D8010	002132Q010	LED SLZ-136C-07-T1
D8011	002132Q030	LED SLZ136C-14-AB-T1
D8012	002132Q020	LED SLZ-136C-11-AB-T1
D8013	002132Q010	LED SLZ-136C-07-T1
D8014	002132Q010	LED SLZ-136C-07-T1
D8015	002132Q010	LED SLZ-136C-07-T1
D8018	DD3RLFB01L	DIODE,SILICON LFB-01L
D8020	DD3RLFB01L	DIODE,SILICON LFB-01L
D8022	DD3RLFB01L	DIODE,SILICON LFB-01L
IC001	I021905741J	IC UPC574J-T
IC003	I03S079100	IC LA7910
IC102	I03D06358T	IC LA6358T
IC201	I03DE7520N	IC LA7520N
IC302	I03S072100	IC LA7210
IC350	I03SP44250	IC LA4425
IC401	I06DE20250	IC M52025SP
IC402	I02SD14880	IC UPC1488H
⚠ IC502	I03A98M090	IC L78M09
⚠ IC503	I02A94M100	IC UPC24M10HF

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
		SEMICONDUCTORS (CONT)
IC601	152D06326C	IC UPD6326C
IC651	156D07007A	IC OEC7007
IC901	105DE77780	IC TA7778P
IC1001	154D50017C	IC OEC0017C
IC1002	106S51954A	IC M51954AL-600Y
IC1003	107S06239A	IC BA6239A
IC1005	107D003930	IC BA10393
IC2001	197D49011C	IC OEC9011C
IC3001	103D373300	IC LA7330
IC4001	103D37323A	IC LA7323A
IC4002	103D389920	IC LC8992
IC4101	103DG7320A	IC LA7320-A
⚠ IC5001	103T772970	IC LA7297
IC7001	103A97805V	IC L7805V
IC7002	106195237L	IC M5237L
IC7003	106195237L	IC M5237L
IC8001	150DTB004A	IC OECB004A
IC8002	152D06252C	IC UPD6252C
IC8003	101901280M	IC MN1280M
Q101	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q102	TN7TD03001	COMPOUND TRANSISTOR DTC144ESTP
Q201	TC3T030000	TR.,SILICON 2SC3000(D,E)-AA
Q205	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q235	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q301	TD3T007340	TR.,SILICON 2SD734(E,F,G)-AA
Q302	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q305	TN7TJ03001	COMPOUND TRANSISTOR DTC114TSTP
⚠ Q401	TD3G018250	TRANSISTOR,SILICON 2SD1825Z-SA
⚠ Q402	TD1G016800	POWER TRANSISTOR 2SD1680
Q403	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q404	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q405	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q407	TP7TD03002	COMPOUND TRANSISTOR DTA144TSTP
Q408	TN7TD03001	COMPOUND TRANSISTOR DTC144ESTP
Q501	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q502	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
⚠ Q503	TB3000825S	TRANSISTOR,SILICON 2SB825S
Q504	TD3T007340	TR.,SILICON 2SD734(E,F,G)-AA
Q505	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q601	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q602	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
Q603	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q604	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q605	TC3T0536SF	TRANSISTOR,SILICON 2SC536F-SPA-AC
Q607	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
Q608	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
Q609	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
Q610	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q612	TA3T0608KF	TRANSISTOR,SILICON 2SA608KF-NP-AA
Q618	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q651	TC3T0536KG	TRANSISTOR,SILICON 2SC536KG-NP-AA
Q653	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
Q701	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q702	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q703	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q705	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
Q706	T87A02412K	TRANSISTOR,SILICON 2SC2412KT147
Q707	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
⚠ Q801	TA3T016240	TRANSISTOR,SILICON 2SA1624(D,E)-AA
⚠ Q802	TA3T016240	TRANSISTOR,SILICON 2SA1624(D,E)-AA
⚠ Q803	TA3T016240	TRANSISTOR,SILICON 2SA1624(D,E)-AA
Q804	TC3T022710	TRANSISTOR,SILICON 2SC2271(D,E)-AE
Q805	TC3T022710	TRANSISTOR,SILICON 2SC2271(D,E)-AE
Q806	TC3T022710	TRANSISTOR,SILICON 2SC2271(D,E)-AE
Q901	TA2T00952L	TRANSISTOR,SILICON 2SA952LT
Q952	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
⚠ Q1001	TD3T011110	TRANSISTOR,SILICON 2SD1111-AA
Q1005	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q1006	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
⚠ Q1007	TC3T022740	TRANSISTOR,SILICON 2SC2274(E,F)-AA
Q1010	TN3TC03001	COMPOUND TRANSISTOR 2SC3400-AC
⚠ Q1011	TB3T006980	TRANSISTOR,SILICON 2SB698(E,F)-AA
Q1013	TN7TC03001	COMPOUND TRANSISTOR DTC124ESTP
Q1014	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q1017	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q1019	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q1021	TA3T0984K0	TRANSISTOR,SILICON 2SA984K(E,F)-AA
Q1022	T83A028120	TR.,SILICON 2SC2812-(L6,L7)-TA
Q1023	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q1024	T83A028120	TR.,SILICON 2SC2812-(L6,L7)-TA
Q1025	T83A028120	TR.,SILICON 2SC2812-(L6,L7)-TA
Q1026	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q2003	TP3TD05001	COMPOUND TRANSISTOR 2SA1341(BL)-TA
Q2004	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q2005	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q2007	T83A028120	TR.,SILICON 2SC2812-(L6,L7)-TA
Q2009	TP3TD05001	COMPOUND TRANSISTOR 2SA1341(BL)-TA
Q2010	TN3TD05001	COMPOUND TRANSISTOR 2SC3395(BY)-TA
Q3001	TA3T0608K0	TR.,SILICON 2SA608K(F,G)-NP-AA
Q3002	T87A02412K	TR.,SILICON 2SC2412KT147(R,S)
Q3004	TC3T0536S0	TR.,SILICON 2SC536(F,G)-SPA-AC
Q3006	TC3T0536S0	TR.,SILICON 2SC536(F,G)-SPA-AC
Q3007	TC3T0536S0	TR.,SILICON 2SC536(F,G)-SPA-AC
Q3008	TC3T0536S0	TR.,SILICON 2SC536(F,G)-SPA-AC
Q4001	T67A1037K0	TR.,SILICON 2SA1037KT147(R,S)
Q4002	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4003	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4005	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4006	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4007	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4008	TA3T0608K0	TR.,SILICON 2SA608K(F,G)-NP-AA
Q4009	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q4010	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
⚠ Q5005	TC1T013170	TRANSISTOR,SILICON 2SC1317-T
⚠ Q7001	TD3H018250	TRANSISTOR,SILICON 2SD1825Z-LU
Q7002	TD3T011110	TRANSISTOR,SILICON 2SD1111-AA
Q7003	TC3T0536KF	TRANSISTOR,SILICON 2SC536KF-NP-AA
⚠ Q7005	TB3001134R	TRANSISTOR,SILICON 2SB1134R
⚠ Q7006	TB3G01134R	TRANSISTOR,SILICON 2SB1134R-SA
Q7007	TD3T005450	TR.,SILICON 2SD545(E,F)-NP-AA
Q8001	T83A028127	TRANSISTOR,SILICON 2SC2812-L7-TA
Q8002	TP3TC05001	COMPOUND TRANSISTOR 2SA1342(CL)-TA
Q8003	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
Q8004	TN3TD05001	COMPOUND TRANSISTOR 2SC3395(BY)-TA
Q8005	TN3TC05001	COMPOUND TRANSISTOR 2SC3396(CY)-TA
		COILS & TRANSFORMERS
L001	021JA2101K	COIL 100 UH
L002	02A1281871	CORE,TRIDAL KR06TT281807
L202	021JA6R82M	COIL 0.82 UH
L203	0336000168	COIL,VIDEO IFT 3600016
L204	0336000178	COIL,VIDEO IFT 3600017
L205	021JA6150K	COIL 15 UH
L206	0336000188	COIL,VIDEO IFT 3600018
L207	03360L0018	COIL,TRAP 360L001
L401	0221000006	COIL,LINEARITY 21000006
L402	021614102K	COIL 1 MH
L501	028H090002	DEGAUSS COIL FF-13009(S)
L601	021JA6270K	COIL 27 UH
L602	021JA68R2K	COIL 8.2 UH
L605	03362R0047	COIL,CHROMA 362R004
L606	0335000098	COIL,MATCHING 3500009
L607	021673120K	COIL 12 UH
L608	021JA68R2K	COIL 8.2 UH
L651	021JA6150K	COIL 15 UH
L701	021673120K	COIL 12 UH
L801	021673101K	COIL 100 UH
L3002	021JA6180K	COIL 18 UH
L3003	021JA63R3K	COIL 3.3 UH
L3005	021B73101K	COIL 100 UH
L3006	021JA6150K	COIL 15 UH
L4001	021JA6181K	COIL 180 UH
L4003	021JA6470K	COIL 47 UH
L4004	021JA61R0M	COIL 1.0 UH
L4005	021B73101K	COIL 100 UH
L4006	021B73101K	COIL 100 UH
L4007	021JA6330K	COIL 33 UH
L4009	021JA6151K	COIL 150 UH
L4010	021JA6220K	COIL 22 UH
L4011	021JA6100K	COIL 10 UH
L4012	021JA6180K	COIL 18 UH
L4013	021JA6150K	COIL 15 UH
L4014	021JA6121K	COIL 120 UH
L4015	021JA6270K	COIL 27 UH
L4017	021B73101K	COIL 100 UH
L4101	021B73101K	COIL 100 UH
L4102	021B73101K	COIL 100 UH
L5001	021B73101K	COIL 100 UH
L5002	021B73102K	COIL 1 MH
L5003	021J74682J	COIL 6.8 MH
L8006	02A1281871	CORE,TRIDAL KR06TT281807
T401	0450190061	TRANS.,HORIZONTAL DRIVE 5019006
⚠ T501	0405660163	TRANSFOMER,POWER AC 0566016
⚠ T5001	0336260038	COIL,BIAS OSC 3626003
⚠ T7001	0405570279	TRANSFORMER,POWER AC 0557027
		JACKS
J351	060C121008	JACK,RCA 3.5 TC38-001
J501	0602602001	JACK,DC HEC0470-01-630
J701	0632000056	JACK,PLATE JPJ0951-01-043
⚠ J801	0662120007	SOCKET,CRT HPS1171-01-050

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	
		SWITCHES	
⚠ SW501	0530105014	SWITCH,PUSH	ESB-82127V
SW502	0510122016	SWITCH,SLIDE	ESD-2779T
SW503	0500101023	PUSH SWITCH	ESB82128
SW8001	0504101T20	SWITCH,TACT	EVQ-11405K
SW8004	0504101T20	SWITCH,TACT	EVQ-11405K
SW8005	0504101T20	SWITCH,TACT	EVQ-11405K
SW8007	0504101T20	SWITCH,TACT	EVQ-11405K
SW8009	0504101T20	SWITCH,TACT	EVQ-11405K
SW8010	0504101T20	SWITCH,TACT	EVQ-11405K
SW8011	0504101T20	SWITCH,TACT	EVQ-11405K
SW8012	0504101T20	SWITCH,TACT	EVQ-11405K
SW8013	0504101T20	SWITCH,TACT	EVQ-11405K
SW8014	0504101T20	SWITCH,TACT	EVQ-11405K
SW8015	0504101T20	SWITCH,TACT	EVQ-11405K
SW8016	0504101T20	SWITCH,TACT	EVQ-11405K
		VARIABLE RESISTORS	
VR201	V1163Q3BT6	VR,SEMIFIXED	EVNDXAA03BQ3
VR401	V1263Q4B03	VR,SEMIFIXED	RH0624CS4J0A
VR402	V116315BT6	VR,SEMIFIXED	EVNDXAA03B15
VR403	V195D53B11	VR,SEMIFIXED	KVSF887VK-B5K
VR501	V116313BT6	VR,SEMIFIXED	EVNDXAA03B13
VR602	V1163Q5BT6	VR,SEMIFIXED	EVNDXAA03BQ5
VR604	V116313BT6	VR,SEMIFIXED	EVNDXAA03B13
VR606	V1163H4BT6	VR,SEMIFIXED	EVNDXAA03BE4
VR2001	V1263Q5BT6	VR,SEMIFIXED	RH0638CS5R02A
VR2002	V126315BT6	VR,SEMIFIXED	RH0638C15R02A
VR4001	V1263H4BT6	VR,SEMIFIXED	RH0638CJ4R02A
VR4002	V126314BT5	VR,SEMIFIXED	RH0636C14R07B
VR4003	V1263L3BT6	VR,SEMIFIXED	RH0638CN3R02A
VR4004	V126314BT5	VR,SEMIFIXED	RH0636C14R07B
VR4005	V126314BT5	VR,SEMIFIXED	RH0636C14R07B
VR4101	V126214BT1	VR,SEMIFIXED	RH0632C14R01
VR4102	V126214BT1	VR,SEMIFIXED	RH0632C14R01
VR5001	V126314BT5	VR,SEMIFIXED	RH0636C14R07B
VR5002	V1263E5B03	VR,SEMIFIXED	RH0624CE5J
VR8101	V028025B05	VR,ROTARY	RK09K1110
		P.C. BOARD ASSEMBLIES	
PCB001	A39817A07AS	PCB ASS'Y	TM0196-S
PCB002	A39817A11A	PCB ASS'Y	TC0143
PCB003	A39817A25A	PCB ASS'Y	TE0662
PCB004	A39817A39A	PCB ASS'Y	TE0618
PCB005	A39817A03A	PCB ASS'Y	VE0364
PCB006	A39817A04A	PCB ASS'Y	VE0366
PCB101	A39817A01A	PCB ASS'Y	VV0189
PCB401	A43709A33A	PCB ASS'Y	VE0244
PCB550	A39407A550	SEE DECK REPLACEMENT PARTS LIST	
PCB701	A39817A02A	PCB ASS'Y	VP0097
PCB702	A39817A02A	PCB ASS'Y	VE0367
		MISCELLANEOUS	
ANT001	1251108005	ANTENNA ROD	T4-216AP
B501	024A8407C3	CORE,BEADS	BL02RN2-R62T2
BT001	141T004005	BATTERY,MANGAN	UM-4
BT002	141T004005	BATTERY,MANGAN	UM-4
CD351	068M12196A	CORD,CONNECTOR	8M12196A
⚠ CD501	1201651001	CORD,AC	01651001
CD503	1211152405	CORD,CAR BATTERY	1211152405
CD801	068318073A	CORD,CONNECTOR	8318073A
CD802	1227033005	CORD,JUMPER	27033005
CD803	068301217A	CORD,EIS CONNECTOR	8301217A
CD804	068D01340A	CORD,CONNECTOR	8D1340A
CF001	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF201	1027038R91	FILTER,SAW	F1034
CF202	1012105R51	FILTER,CERAMIC TRAP	TPS5.5MB
CF301	101225R501	FILTER,CERAMIC	CDA5.5MC24B
CF302	1012005R52	FILTER,CERAMIC	SFE5.5MC2
CF350	116F3TH4Z1	FILTER,EMI	LTSTF223ZBTB
CF701	116F2TH3M1	FILTER,EMI	LTSTX222MBTB
CP001	126R000019	LAG TERMINAL	24041
CP008	069D440019	CONNECTOR PCB SIDE	TV-50P-04-A1
CP204	069M010010	CONNECTOR PCB SIDE	005P-1100
CP351	0694120099	CONNECTOR PCB SIDE	171825-2
CP402	069D420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP501	0694430100	CORD,UX CONNECTOR	2-173270-3
CP505	069M010010	CONNECTOR PCB SIDE	005P-1100
CP701	06972B0018	CONNECTOR PCB SIDE	TKX-P11P-H1
CP702	069Q170179	CONNECTOR PCB SIDE	CPB1807-0101
CP804	069D01001A	CONNECTOR PCB SIDE	003P-2100
CUS01	800JF00166	CUSHION-A	
CUS02	800JF00166	CUSHION-A	
CD001A	068MG30002	CORD,CONNECTOR	8MG30002

REF.NO	PART NO	DESCRIPTION	
		MISCELLANEOUS (CONT)	
CD2002	068126028A	CORD,EIS CONNECTOR	8126028A
CD2003	068129020A	CORD,EIS CONNECTOR	8129020A
CD4102	068128028A	CORD,EIS CONNECTOR	8128028A
CD7001	068132055A	CORD,EIS CONNECTOR	8132055A
CD7002	1226031204	CORD,JUMPER	26031204
CD7004	068123016A	CORD,EIS CONNECTOR	8123016A
CD7005	068128027A	CORD,EIS CONNECTOR	8128027A
CD7006	068126026A	CORD,EIS CONNECTOR	8126026A
CD8001	1226052805	CORD,JUMPER	26052805
CD8002	1226052805	CORD,JUMPER	26052805
CD8003	06812C014B	CORD,EIS CONNECTOR	812C014B
CD8005	1226033402	CORD,JUMPER	26033402
CD8006	068128034A	CORD,EIS CONNECTOR	8127034A
CD8007	068127025A	CORD,EIS CONNECTOR	8127025A
CD8009	068101323A	CORD,EIS CONNECTOR	8101323A
CD8010	068101319A	CORD,EIS CONNECTOR	8101319A
CP0003	06942C0129	CONNECTOR PCB SIDE	1-173981-2
CP0006	0694280129	CONNECTOR PCB SIDE	173981-8
CP1001	0694220129	CONNECTOR PCB SIDE	173981-2
CP2001	069H220329	CONNECTOR PCB SIDE	IL-S-2P-S2T2-EF
CP2002	0694260129	CONNECTOR PCB SIDE	173981-6
CP2003	0694290129	CONNECTOR PCB SIDE	173981-9
CP2004	06942F0129	CONNECTOR PCB SIDE	1-173981-5
CP2501	0694260124	CONNECTOR PCB SIDE	4-173981-6
CP2502	0694280124	CONNECTOR PCB SIDE	4-173981-8
CP4101	0694280139	CONNECTOR PCB SIDE	173979-8
CP5001	069H250329	CONNECTOR PCB SIDE	IL-S-5P-S2T2-EF
CP7001	0694430100	CORD,UX CONNECTOR	2-173270-3
CP7004	0694230129	CONNECTOR PCB SIDE	173981-3
CP701B	069XU30019	CONNECTOR PCB SIDE	S2P3-VH
CP8001	067R013019	WIRE HOLDER	51048-1300
CP8003	06942C0129	CONNECTOR PCB SIDE	1-173981-2
CP8007	0694270124	CONNECTOR PCB SIDE	4-173981-7
CT7001	04910005AI	CONVERTER DC/DC	910005AI
DL601	103S0R2802	DELAY LINE	ELT-10Z263M
DL602	104114R43G	DELAY LINE GLASS	EFDEN645A31F
DL3001	104A24R436	DELAY LINE GLASS	ADL-SE2244R
EAR351	074N130007	EARPHONE	SE100-335
⚠ F501	0808T0R802	FUSE	T 800MA 250V
⚠ F502	0808T05002	FUSE	T 5A 250V
⚠ FB401	0432100041	TRANSFORMER FLYBACK	3210004
FH501	06760T0001	HOLDER,FUSE	PFC5000-0202
FH502	06760T0001	HOLDER,FUSE	PFC5000-0202
FH503	06760T0001	HOLDER,FUSE	PFC5000-0202
FH504	06760T0001	HOLDER,FUSE	PFC5000-0202
⚠ F7002	080ET3R101	FUSE	BET3.15A(T)250V
⚠ F7003	080ET02001	FUSE	BET 2 A(T)250V
FH7001	067Y0T0004	HOLDER	H0060
FH7002	067Y0T0004	HOLDER	H0060
⚠ ICP501	084E31R601	IC PROTECTOR	PRF-1600-F003
NR601	1102333102	R,NETWORK	RGLE3X331J
NR1001	11023472T1	R,NETWORK	RGLD3X472J-T21
NR1002	11023104T1	R,NETWORK	RGLD3X104J-T21
NR1003	11023223T1	R,NETWORK	RGLD3X223J-T21
NR1004	11023472T1	R,NETWORK	RGLD3X472J-T21
OS8001	0779010002	REMOTE RECEIVER	GP-1U541
PF3001	1147L15605	FILTER,LOW PASS	47L15605
PF3002	1147B4460A	FILTER,BAND PASS	47B4460A
PF3003	1147B50604	FILTER,BAND PASS	47B50604
PF4001	1147L30606	FILTER,LOW PASS	47L30606
PF4002	1147H14605	FILTER,HIGH PASS	47H14605
PF4003	1147L33605	FILTER,LOW PASS	47L33605
RY501	0560110101	RELAY	AJZ32157
⚠ RY7001	0560160101	RELAY	AJW1512 M01
SP351	070V131004	SPEAKER	S08J73
TM001	076G031090	TRANSMITTER	EUR-531156
⚠ TU001	0145611009	TUNER UHF-VHF	TERE1-091A
TC8001	0100614T08	C,CERAMIC TRIMMER	VCT51F522A
⚠ V801	098F090400	COLOR PICTURE TUBE	2701B22-ST-TC20
X251	1003R50001	CERAMIC OSCILLATOR	KBR-500AH2
X401	1002R50004	CERAMIC OSCILLATOR	CSB500F9
X601	10064R4306	CRYSTAL HC-49/U	4433.619KHZ
X651	100617R702	CRYSTAL HC-49/U	17734.475KHZ
X1001	1002T4R001	CERAMIC OSCILLATOR	CSA4.00MG-TF01
X3001	1006A4R302	CRYSTAL HC-49/U	4.43361875MHZ
X8001	100D32R801	CRYSTAL DT-26S	32.768KHZ
X8002	10064R1903	CRYSTAL DS-MAT	4.194304MHZ

RESISTOR
RC.....CARBON RESISTOR

CAPACITORS
CC.....CERAMIC CAPACITOR
CE.....ALUMI ELECTROLYTIC CAPACITOR
CP.....POLYESTER CAPACITOR
CPP.....POLYPROPYLENE CAPACITOR
CPL.....PLASTIC CAPACITOR
CMP.....METAL POLYESTER CAPACITOR
CMPL.....METAL PLASTIC CAPACITOR
CMPP.....METAL POLYPROPYLENE CAPACITOR
CST.....STYROL CAPACITOR

INTERCHANGEABLE PARTS LIST

NOTE:THE FOLLOWING PART(S) MAY BE SUBSTITUTED FOR PARTS INDICATED IN THE BASIC PART(S) LIST (WITH THE SAME REF.NO.). THESE PARTS SHARE THE SAME ELECTRICAL CHARACTERISTICS AND OTHER ELEMENTS FOR COMMON USAGE.
EITHER PART NUMBER MAY BE USED IN THIS UNIT.

REF.NO	DESCRIPTION (PART NO)	DESCRIPTION (PART NO)
L501	8Q090002 (028Q090002)	FF-13009(S) (028H090002)
SP351	S08J73 (070V131004)	S08J60 (070V132006)

MECHANICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
101	A39817A720	CABINET,FRONT ASS'Y
	701JPJ0821	CABINET,FRONT
	713JPA0128	GLASS,LED(A)
	7220000898	SHEET,PTB
102	713JPD0013	COVER,CRT
103	752JSA0290	PLATE,TV SHIELD
104	899EDS1208	EDGING SADDLE
105	736JPA0020	BUTTON,DEGAUSS
106	733JPA0022	KNOB,SLIDE
107	A39817A740	CABINET,BACK ASS'Y
	702JPA0400	CABINET,BACK
	7250000274	SHEET,WARNING
	7222021425	SHEET,RATING
108	705JPB0024	HANDLE
	(705SPA0001)	HANDLE
109	769JPA0007	HOLDER,HANDLE
110	741JUA0015	SPRING,CRT EARTH
111	800JR00043	SHEET,CRT SUPPORT
112	800JR00051	SHEET,CRT SUPPORT
113	702JSA0036	CABINET,TOP
114	752JSA0295	SHIELD,TOP(A)
115	8900P3035W	NYLON RIVETS
116	702JPA0409	CABINET INSIDE
117	753WSA0007	PLATE TRANS EARTH
118	753WSA0008	PLATE EARTH
119	702JSA0033	CABINET BOTTOM
120	761JPA0103	HOLDER,VCP(L)
121	761JPA0102	HOLDER,VCP(R)
122	789JRA0002	BELT,FRONT LOADING
123	A44802A650	FRONT LOADING UNIT
124	7230003569	FLAP
125	899PEC0340	CORD CLAMP NO.PEC-034-0
126	732JPA0049	KNOB,TRACKING
127	711JPA0063	PLATE,RECEIVER
128	735JPA0497	BUTTON,TV/VCP
129	735JPD0707	BUTTON,SEARCH
130	735JPA0492	BUTTON,CHANNEL/VOLUME DOWN
131	735JPA0491	BUTTON,CHANNEL/VOLUME UP
132	735JPD0706	BUTTON,DECK
	713JPA0129	GLASS,LED(B)
133	759JBA0005	COVER,REMOCON
201	8107630604	SCREW,TAP TITE(S) BRAZIER 3*6
202	8107640604	SCREW,TAP TITE(S) BRAZIER 4*6
203	8107640A04	SCREW,TAP TITE(S) BRAZIER 4*10
204	8110630A24	SCREW,TAP TITE(P) BRAZIER 3*12
205	8117240A44	SCREW,TAPPING(BO) BIND 4*14
206	8117540A04	SCREW,TAPPING(BO) TRUSS 4*10
207	8117540A64	SCREW,TAPPING(BO) TRUSS 4*16
208	8141140C04	SCREW,TAP TITE(P) PAN GW14 4*30
209	8102240804	SCREW,BIND M4*8
210	8107230404	SCREW,TAP TITE(S) BIND 3*4
211	8107230604	SCREW,TAP TITE(S) BIND 3*6
212	8107230804	SCREW,TAP TITE(S) BIND 3*8
213	8110630804	SCREW,TAP TITE(P) BRAZIER 3*8
214	8117D30A04	SCREW,TAPPING(BO) WH8 3*10
215	8117140A24	SCREW,TAPPING(BO) PAN 4*12
216	8117240A44	SCREW,TAPPING(BO) BIND 4*14
218	8110630A04	SCREW,TAP TITE(P) BRAZIER 3*10
219	8110630804	SCREW,TAP TITE(P) BRAZIER 3*8
---	J3940828B	WARNING SHEET
---	J3980420	DEW CAUTION SHEET
---	J3981701	INSTRUCTION BOOK
---	J3981707	QUICK SET-UP SHEET
---	J4511102C	GUARANTEE CARD
---	791SHA0029	LAMIFILM,BAG
---	792JHA0197	PACKAGE,TOP
---	792JHA0198	PACKAGE,BOTTOM
---	793JCD2279	GIFT BOX

DECK REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	
301	850P500023	SPRING,TR.	
302	850A600093	TENSION BAND ASS'Y	
303	850A400077	TENSION,ARM ASS'Y	
304	850P800141	SPRING,TENSION ARM	
305	850A200026	REEL DISK S ASS'Y	
306	850A600117	MAIN BRAKE S ASS'Y	
307	850P800187	SPRING,MAIN BRAKE	
308	850P600289	ARM,S-S BRAKE	
309	850P800164	SPRING,SS BRAKE	
310	850A400087	BASE,S INCLINED ASS'Y	
311	850P800190	SPRING,M-B 3	
312	850A200029	REEL DISK T ASS'Y	
313	850A600118	MAIN BRAKE T ASS'Y	
314	850A400080	BASE,T INCLINED ASS'Y	
315	850P500046	ROLLER,IMPEDANCE	
316	850P600274	FLANGE,P1	
317	850P800075	SPRING,P1	
318	850P600281	LEVER,REC.SW.	
319	850P500042	BASE,AC HEAD 2	
320	850P800150	SPRING,AC HEAD BASE	
321	850A600102	LOADING MOTOR BOX ASS'Y	
322	850P600326	BELT,LOADING MOTOR	
323	850A500006	P-R LEVER ASS'Y	
324	850P600314	NUT,ADJUST X	
325	850A000036	MAIN,CHASSIS ASS'Y	
326	850A400073	PINCH ROLLER ARM ASS'Y	
327	850P800149	SPRING,P-R ARM	
328	850A400078	LIMITER,POST ARM ASS'Y	
329	850P800148	SPRING,L-P ARM	
330	850P600305	CAM 1	
331	850A600100	WORM ASS'Y	
332	850A400085	G-ROLLER ASS'Y	
333	850A300031	LOADING,LEVER 2 ASS'Y	
334	850P600291	LEVER,SUB BRAKE	
335	850A900083	LEVER,FRONT LOADING ASS'Y	
336	850A300030	LOADING,ARM T ASS'Y	
337	850A300029	LOADING,ARM S ASS'Y	
338	850A600122	T-S BRAKE 2 ASS'Y	
339	850P800165	SPRING,TS BRAKE	
340	850A200027	CLUTCH ASS'Y	
341	850A200026	IDLER ASS'Y	
342	850P600300	MAIN BRAKE LEVER 1	
343	850P600290	ACTUATOR,SUB BRAKE	
344	850A600113	CLUTCH ACTUATOR ASS'Y	
345	850P600303	LEVER TENSION	
346	850P600312	POST,P4	
347	850P600299	SLIDE,MAIN BRAKE	
348	850P800188	SPRING,M-B SLIDE	
349	850A600109	M-B 2 LEVER ASS'Y	
350	850A600108	T-A SLIDE ASS'Y	
351	850P600301	LEVER,LIMITER POST	
352	850P600302	LEVER,CLUTCH ACTUATOR	
353	850P300112	SLIDE,LOADING 2	
354	850P600304	CAM 2	
355	850A600099	M-B 3 LEVER ASS'Y	
356	850A300035	GEAR,LOADING S ASS'Y	
357	850A300036	GEAR,LOADING T ASS'Y	
358	850P800147	SPRING,LOADING GEAR	
359	850P800167	SPRING,AZIMUTH	
360	8144J30604	CONEHEAD SCREW	M3*6 CH
361	8146230A14	JOINT SCREW BIND	M3*11 CH
362	850P500010	ADJUST NUT	
363	850P800189	SPRING,FRONT LOADING LEVER	
364	850P600313	PULLEY,LOADING MOTOR	
365	850P600325	BELT,REEL	
366	850P800146	SPRING,P4	
367	850P600273	SLEEVE,P1	
368	850PAA0080	SHIELD,CASE	
369	850P000262	BRACKET,WORM 3	
370	789JRA0002	BELT,FRONT LOADING	
371	850AAA0051	LID,AMP SHIELD 6 ASS'Y	
372	8147130804	TAP TITE(S) PAN W6	3*8 CH
373	850P000285	CS-RING	2.6*5.4*T0.1
374	850PAA0140	SHEET,DRUM SHIELD 2	
375	850A400090	G-ROLLER ASS'Y	
401	850P900457	LINK GEAR L	
402	850P800175	SPRING LINK GEAR L	
403	850P900524	GEAR,SYNCHRO	
404	850P900360	LEVER,FLAP	
405	850P800157	SPRING,FLAP FL	
406	850A900096	TOP BRACKET ASS'Y	
407	850P900458	LOCKER	
408	850P800154	SPRING,LOCKER	
409	850P900349	CASS,SIDE L	

REF.NO	PART NO	DESCRIPTION	
410	850P900354	SPRING,PACK	
411	850P900444	CASS,SIDE R A	
412	850P900473	REMOVING 2	
413	850P800198	SPRING,REMOVING 2	
414	850P900351	CASS,HOLDER	
415	850P900267	SHAFT,SYNCHRO	
416	850P900455	TAPE GUIDE PIECE VR	
417	850P900445	BRACKET,SIDE R1A	
418	850P900361	LEVER,FRONT LOADING SW.	
419	850P800158	SPRING,FRONT LOADING SW.LEVER	
420	850A900098	SIDE BRACKET R2 ASSY	
421	850P900456	LINK GEAR R	
422	850P800153	SPRING,CLUTCH GEAR	
423	850P800181	SPRING,LINK GEAR R2	
424	850P900357	GEAR,CLUTCH	
425	850P900362	LEVER,LOCK	
426	850P800159	SPRING,LOCK LEVER	
427	850P900367	WHEEL	
428	850P900364	LEVER,CLUTCH	
429	850P900363	LEVER,SLIDE	
430	850P800180	SPRING,SLIDE LEVER 2	
431	850P900366	JOINT,PULLEY	
432	850A900082	WORM ASS'Y	
433	850P900446	OPENER A	
434	850P800179	SPRING,OPENER B	
435	850P900396	COVER,SENSOR	
436	A44802A640	SIDE BRACKET R ASS'Y	
437	A44802A690	CASSETTE HOLDER ASS'Y	
438	850P900523	SPRING,FRONT LOADING EARTH	
501	8107126604	TAP TITE(S) PAN	2.6*6 CH
502	8102130404	PAN	M3*4 CH
503	8107226804	TAP TITE(S) BIND	2.6*8 CH
504	8107230A44	TAP TITE(S) BIND	3*14 CH
505	8107230A64	TAP TITE(S) BIND	3*16 CH
506	82A4080054	WASHER	4.3*8.0*T0.5
507	8107230804	TAP TITE(S) BIND	3*8 CH
508	8110230804	TAP TITE(P) BIND	3*8 CH
509	83ETW25000	E-RING	2.5
510	82Q3154B3N	PW	3.1*5.4*T0.13
	82Q315403N	PW	3.1*5.4*T0.3
511	82P255504N	PW(CUT)	2.5*5.5*T0.4
512	82P316005N	PW(CUT)	3.1*6.0*T0.5
513	82A3270054	WASHER	3.1*7.0*T0.5
514	82P255504N	PW(CUT)	2.5*5.5*T0.4
515	8300720000	NYLON NUT	M2
516	815DJ20302	SET SCREW 6 CUP POINT	M2*3 BK
517	8145J30601	SCREW +UPSET	M3*6 NI
518	83CST35050	CS RING	3.5
519	83ETW30060	E-RING	3.0
520	8117B26804	TAPPING(B0) WH6	2.6*8 CH
521	82P2660C5N	PW(CUT)	2.6*6.0*T0.25
550	82Q315405N	PW	3.1*5.4*T0.5
551	86817CGA04	TAPPING(B0) BIND WH6.5	2.6*10 CH
C1501	CH4FF03H4Z	CC	22000 PF 25V
C1502	CH4FF03H4Z	CC	22000 PF 25V
CD2004	06812F003A	CORD EIS CONNECTOR	812F003A
CD5001	068126029A	CORD EIS CONNECTOR	8126029A
CD5003	068122007A	CORD EIS CONNECTOR	8122007A
D1100	DAK0000130	DEW SENSOR	HDP-05-A2
D1101	0010100300	INFRARED LED	LN59L
H5001	1523D91010	HEAD AUDIO CONTROL	HVMZA1054A
H5002	1543D02004	HEAD FULL ERASE	HVFMF0006A
L1501	02BL000005	ELECTRO MAGNET	JTM1002-01-01
M101	1596948001	MOTOR,LOADING	MXN-13FB09C
M2001	1510998016	CAPSTAN,MOTOR	DFX-67B4VWA3
PCB550	A39407A550	DECK PCB ASS'Y	VE0337
Q1101	0000G00040	PHOTO TRANSISTOR	PT493FT
Q1102	0000G00040	PHOTO TRANSISTOR	PT493FT
Q1510	0002300140	PHOTO COUPLER	SPI-315-04
R1501	R001T6181J	RC	180 OHM 1/6W
R1502	R001T6271J	RC	270 OHM 1/6W
R1504	R002T2101J	RC	100 OHM 1/2W
SW101	0500211001	PUSH SWITCH	SPPB61023A
SW102	0520244002	SWITCH,ROTARY	SRZZ00081A
SW103	0501211001	PUSH SWITCH	SPPB51096A
UN4001	A39402A500	UNIT,CYLINDER	A39402A500
UN4002	A44804A620	UPPER DRUM ASS'Y	A44804A620